

FaceLift® Nomad 45 Litre Trolley System Owner's Manual

Original Instructions

Nomad 45L Chemical EF1000 (FLN45T-C)

Revision 1

(English)



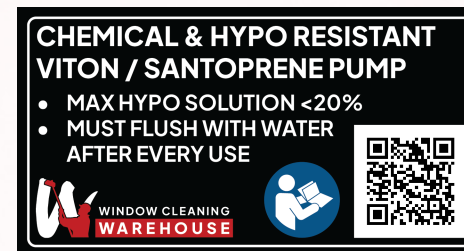
Contents

Nomad 45 Litre Compatibility Notice	1
Product Description	1
Nomad 45 Litre Anatomy	2–3
Exterior Overview	2
Interior Overview	3
Nomad 45 Litre Operation	4–11
Controller	4–5
Best Practice	6–7
Using Third-Party Chemical Products	7
Transportation Guide	7
Trolley Maintenance	8–9
Battery Care	8
Safety & HSE Compliance	9
Step-by-Step Flushing Instructions	9
Trolley Maintenance Checklist	10–11
Business and Operator Safety	12–15
Warranty Information	12
Critical Operational Safety	13–15
Mandatory Personal Protective Equipment (PPE)	15
System Diagnostics	16–21
Wiring Diagram & Legend	16–17
Wiring Trouble Shooting	18–21
Common Operational Faults – V16 Controller	19
dE – Dead End	19
P5 – Pressure Switch	19
BAt – Low Battery	20
StP – Stop	20
Err – Error	21
OC – Over Current	21
Operator Notes	22–24
Contact Information	24
Manufacturer's Notes	25

Nomad 45 Litre Compatibility Notice

Product Description

1



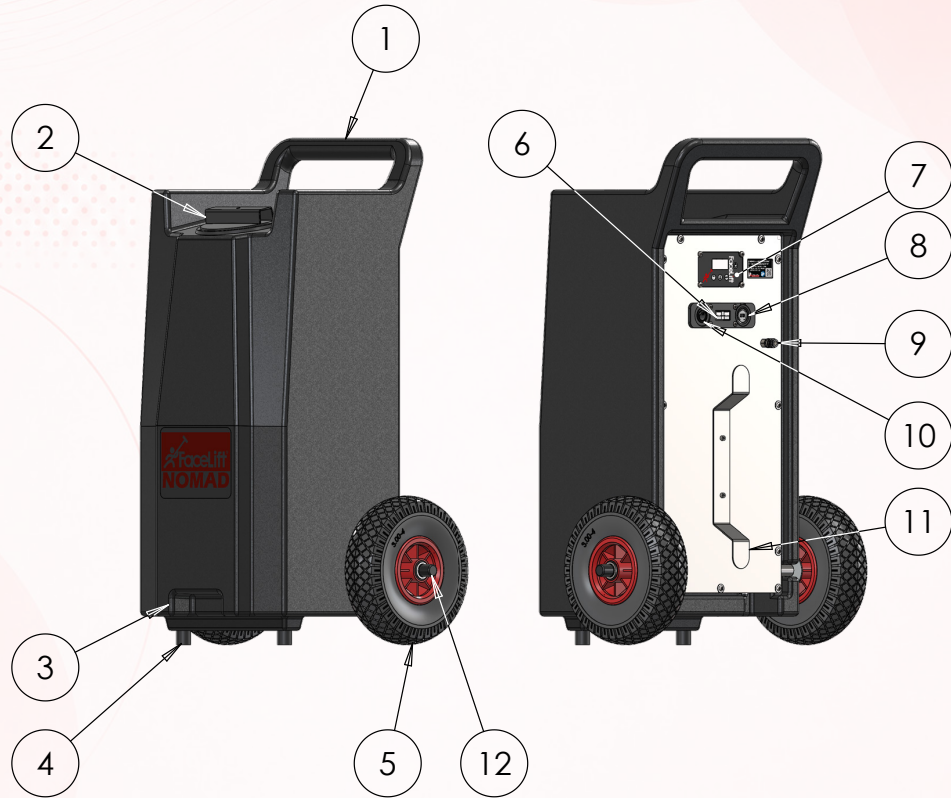
Designed for commercial window cleaning and softwashing applications, the Nomad 45–litre trolley is a portable cleaning system. It comes equipped with a high-density polyethylene (HDPE) tank, polyvinylidene fluoride (PVDF) fittings, and a chemical-resistant pump that features a polypropylene head, Viton valves, and a Santoprene™ diaphragm.

SUITABLE	NOT SUITABLE
Domestic & Commercial Window Cleaning (Pure/DI Water)	Abrasive Slurries & Insoluble Powders (Causes Valve clogging)
Exterior Soft Washing (Softwash Chemical Solutions)	Neat / Undiluted Hypo (Max solution: <20%)
Biocides & Algaecides (DDAC / BAC50 Post-Treatments)	Caustic Soda (Sodium Hydroxide) & Heavy Alkalines
Water-Based Agrochemicals (Pesticides, Herbicides)	Flammable & Volatile Solvents (Petrol, Thinners, Oil Sealers)
Mild Acidic Cleaners (Dilute Shutter Wash / Brick Wash <10%)	Strong Concentrated Acids (e.g. Hydrofluoric Acid)
Ambient / Warm Water Use	Hot Liquids Exceeding Max Temp (>60°C)

**Prior to applying solutions, consult safety data sheets for material compatibility and HSE compliance standards. (see page 7 for more information on compatibility)*

The manufacturer retains authority to **VOID WARRANTY** if damage, neglect, or harsh chemicals compromise system integrity.

Nomad 45 Litre Anatomy Exterior Overview



Getting to know the exterior of your new Nomad 45 Litre Trolley

1. Tank Pull Handle
2. Tank Lid
3. Tank Pickup Handle
4. Nomad Rubber Feet
5. Nomad Anti-Puncture 260mm Wheels
6. Nomad Charger Port
7. Spring V16 Controller
8. Nomad Voltmetre
9. Nomad Series 21 Quick Connector
10. Nomad On / Off switch
11. Hose Hook
12. Nomad Wheel Cap

2

Nomad 45 Litre Anatomy Interior Overview



Getting to know the interior of your new Nomad 45 Litre Trolley

1. Nomad 10A Switch Controller Fuse
2. Nomad Chemical Pump - Everflo
3. Avon ADC12-25Ah
4. Nomad 10A Battery Fuse
5. Nomad Strainer
6. Nomad Tank Pickup

3

Nomad 45 Litre Operation Controller

4

Initial Setup

1. Switch on the main Nomad power switch (Item 10).
2. Press the power button on the Spring V16 controller (Item 7).
3. Use the UP or DOWN arrows to set your desired flow rate (typically set between 20 and 60).



Water should then begin to flow from the brush head. If no water flows after a couple of minutes, please consult the troubleshooting section of this manual.

Operating your Nomad 45 Litre Trolley System

Connect the pole hose to the Nomad outlet and switch on the controller. The outlet is specifically designed to prevent water flow unless a hose is plugged in. Make sure the water tank remains full. Running the pump dry or letting the water source empty completely can draw air into the pump, resulting in an “airlock.” If this happens, see the troubleshooting section of this manual.

To view the battery voltage, press the enter button once.



Press the enter button a second time to return to the active flow rate display.



Nomad 45 Litre Operation Controller

5

Calibrating your Nomad 45 Litre Trolley System

Your trolley system is delivered with a standard factory calibration. However, you may need to adjust this setting depending on your particular operating conditions. To begin, connect your pole hose to the van system outlet and turn on the controller.

Press the up and enter buttons simultaneously to put the controller into calibration mode.



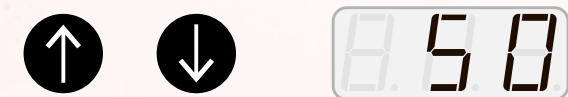
After a brief moment, “CAL” will change to C and a number, which represents your current calibration setting. Typically, the “CAL” setting is generally configured within the C50 to C65 range.



Once you have adjusted the controller to a value between C50 and C65, you must confirm the setting. Press the enter button; the digital display will then indicate “Set”.



While typical usage involves a flow rate ranging from 20 to 60, we suggest identifying a personal preference based on your specific brush setup and desired water consumption.



If the “DE” warning remains visible following these steps, please consult the troubleshooting section of this manual.

Trolley Pressure Management

To protect your Nomad components, you must remove ALL water pressure from the pipes when not actively cleaning.

1. Turn off your delivery pump.
2. Allow remaining water to bleed out through your pole jets (ensure your Uni-valve is open if you have one installed).
3. Once the flow stops, safely disconnect your Aqua Stop coupling.

Note: Leaving the system under constant static pressure causes undue stress on hose connections and fittings, significantly increasing the risk of an internal leak.

Pump Preservation and Care

To ensure pump longevity, never run Nomad pumps dry. Dry running causes motor overheating and internal valve damage, significantly reducing service life.

To safeguard the pump diaphragm, the system must be flushed with fresh water after using any suitable chemical in the pump.

Warning Icon **Warranty Notice:** Pumps are consumables and excluded from warranty unless a manufacturing fault is proven. Coverage does not extend to diaphragm or valve damage resulting from freezing water, chemical neglect, or degradation caused by harsh or unsuitable chemicals.

Winter Maintenance and Care

Severe winter weather can cause water to freeze solid inside your trolley system, leading to irreparable structural damage. Adherence to these core practices is highly recommended:

- **Avoid Overfilling:** Do not fill the water tank to maximum capacity; leave headspace to safely accommodate ice expansion.
- **Depressurize & Drain:** Vent all line pressure and drain your pole hoses completely at the end of every shift.
- **Shelter:** Store the trolley indoors or under shelter whenever possible to mitigate sub-zero exposure.

Battery Health: Always maintain a full charge and avoid prolonged low voltage. For the full battery charging guide and care schedule, see **Page 8**.

Using Third-Party Chemical Products

The Nomad 45 Trolley can be used with third-party cleaning agents, surfactants, and biocides. However, operators are strictly responsible for verifying chemical compatibility with the pump's internal components prior to filling the tank.

How to Verify Chemical Safety (3-Step Checklist):

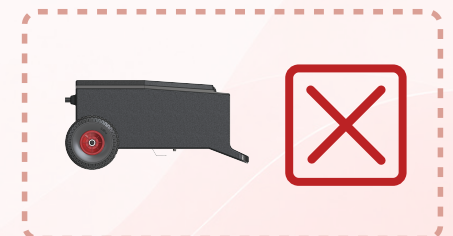
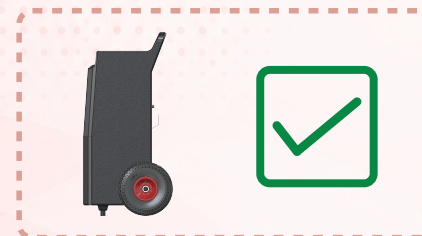
1. **Obtain the Chemical SDS:** Request the official Safety Data Sheet (SDS / COSHH) from your chemical manufacturer or trade supplier.
2. **Check Active Ingredients & Concentration:** Ensure the chemical strength falls within safe operational limits (e.g., Sodium Hypochlorite <20%).
3. **Cross-Reference Wetted Materials:** Verify that the chemical's active ingredients are rated "Grade A (Excellent)" or "Grade B (Good)" for the Nomad's wetted materials:
 - **Pump Head:** Polypropylene
 - **Valves & Seals:** Viton®
 - **Diaphragm:** Santoprene™
 - **Fittings & Hose:** PVDF / Reinforced Polyethylene
 - **Nomad Tank:** HDPE

If a chemical supplier's SDS states that a chemical degrades Viton, Santoprene, or Polypropylene, **do not use it**.

Window Cleaning Warehouse reserves the right to decline warranty coverage for pump or component failure caused by unapproved, incompatible, or improperly flushed cleaning solutions.

Transportation Guide

During transport, ensure the Nomad Trolley remains in an upright position. Laying the unit flat will cause fluid to spill through the vented cap.



Nomad 45 Litre Operation Trolley Maintenance

Battery Care

The Nomad includes built-in voltmeters on both the switch/charging panel and the Spring V16 controller to monitor the 12V 25Ah AGM battery.

Voltage readings correspond to the following charge states:

- **13.0V (±0.2V):** Fully charged
- **12.0V (±0.2V):** Low charge
- **11.5V (±0.2V):** Triggers the “BAT” warning on the V16 controller
- **10.5V (±0.2V) or lower:** The V16 controller will not power on

To maximize battery health and lifespan, avoid deep cycling the 12V AGM battery by keeping the trolley charged above 12V. Deep cycling occurs when the battery is routinely depleted from full capacity to under 30%.

At Window Cleaning Warehouse, we advise keeping the battery charge above 50% and preventing it from remaining in a low-charge state for extended periods.



Fully charged

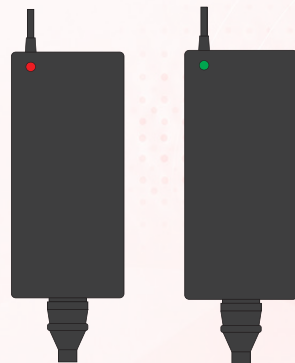


Low charge

For illustrative purposes only

Nomad Charger Indicator LED Key

- **Red LED** trolley is charging
- **Green LED** trolley is fully charged / charger is idle



8

Nomad 45 Litre Operation Trolley Maintenance

9

Pump & Plumbing Flushing Procedure

To maximize the lifespan of your Nomad's pump and plumbing system, **always flush the unit thoroughly with clean water after applying any chemical solutions.** Even though the unit features high-grade chemical-resistant materials including HDPE, PVDF, Viton®, and Santoprene™ residual chemicals can dry out, crystallize, and damage internal pump seals if left inside the system.

Safety & HSE Compliance

Prior to undertaking these steps, review the Safety Data Sheet (SDS / COSHH) for appropriate handling and disposal procedures regarding your specific chemical. Always wear suitable Personal Protective Equipment (PPE) and work in well-ventilated areas. Compliance with local safety regulations and correct disposal guidelines is mandatory.

Step-by-Step Flushing Instructions

1. **Drain Chemical Solution:** Drain any residual chemical solution from the HDPE tank into an approved container, disposing of it in accordance with the product's Safety Data Sheet.
2. **Rinse Tank:** Rinse the inside of the tank thoroughly with clean tap water, then drain completely into a safe disposal receptacle as directed by the chemical SDS.
3. **Flush Plumbing Circuit:** Fill the tank partially with fresh tap water. Switch on the pump and run clean water through the PVDF fittings and hose lines for **at least 5 minutes**. Safely dispose of the flushed liquid according to SDS guidelines.
4. **Check Odour/Residue:** If the system still carries a strong chemical odour or visible residue, repeat steps 2 and 3.

Important Notices

- **Warranty Protection:** Window Cleaning Warehouse reserves the right to void your warranty if we determine that the Nomad Trolley has suffered damage due to chemical neglect, failure to flush, or the use of unapproved substances (such as undiluted hypo >20% or caustic soda).
- **Liability Disclaimer:** Window Cleaning Warehouse accepts no liability for any improper chemical disposal, personal injury, or property damage resulting from the operation or flushing process of the Nomad Trolley.

Nomad 45 Litre Operation Trolley Maintenance Checklist

10

Maintenance Task	Before Every	After Every Use	Weekly / Storage	Reference
Inspect Plumbing & Hose Lines Check fittings, connections, and strainers for leaks or damage.	✓			Page 2-3
Check Battery Voltage Verify charge on voltmeter; charge immediately if below 12.0V.	✓	✓		Page 8
Flush Pump & Hose Circuit Run clean water through system for 5 min after using chemical solutions.		✓		Page 9

Nomad 45 Litre Operation Trolley Maintenance Checklist

11

Maintenance Task	Before Every Use	After Every Use	Weekly / Storage	Reference
Depressurize System Bleed remaining water pressure through pole jets before disconnecting.		✓		Page 6
Full Battery Refresh Charge Charge to 100% (Green LED) before extended storage.			✓	Page 8

Warranty Overview

All Nomad Trolley Systems are supported by a **1-Year Limited Back-to-Base Warranty**.

- **Return & Shipping:** Customers are responsible for all shipping costs associated with returning a unit for inspection and service, unless prior written arrangements have been made with our team.
- **Inspection & Resolution:** Upon inspection, if a manufacturing defect is verified and covered under this warranty, Window Cleaning Warehouse will repair, replace, or refund the unit at our sole discretion.
- **Turnaround Time:** Please allow up to 28 working days for inspection, component sourcing, and repair completion during peak periods.



Exclusions & Limitations

This warranty strictly covers manufacturing faults. Coverage **does not** apply to:

- Accidental damage, misuse, or physical impact caused by the operator.
- Component damage resulting from chemical neglect, improper flushing, or freeze damage.
- Wear-and-tear on consumable components (such as pump diaphragms, valves, and fuses) unless a clear manufacturing defect is proven.



WARNING

CORROSIVE CHEMICAL EXPOSURE & BURNS: Direct contact with softwashing chemicals, biocides, or Sodium Hypochlorite (<20%) causes severe skin burns and permanent eye injury. Always wear chemical-splash goggles, heavy-duty Nitrile/Neoprene gloves, and waterproof protective clothing during filling, operation, and flushing.



WARNING

AEROSOLIZED CHEMICAL INHALATION: High-pressure delivery creates airborne mists and fine droplets. Inhaling mists from biocides or bleach causes severe respiratory burning and lung damage. Always operate in well-ventilated outdoor areas, avoid standing downwind, and wear a half-mask or full-face respirator with ABEK/P3 filters.



CAUTION

PRESSURIZED SPRAY BACK: Disconnecting quick-connect fittings or hose couplings while the plumbing circuit is under static pressure causes sudden, high-velocity chemical spray back. **ALWAYS** turn off the delivery pump and open your pole jets/Uni-valve to bleed all line pressure before uncoupling fittings.



CAUTION

SHORT CIRCUIT & COMPONENT DAMAGE: Directing water streams, chemical spray, or high-pressure washers at the control panel, voltmeter, or internal battery compartment creates immediate short-circuit hazards and permanently damages electrical controls. **NEVER** submerge or pressure-wash the trolley chassis. Keep charging ports sealed during wet operations.



ENVIRONMENTAL WARNING

CHEMICAL RUNOFF & DISPOSAL: Softwashing solutions and rinse water are highly toxic to aquatic life, soil, and plants. **NEVER** flush chemical residue or contaminated rinse water down public rainwater storm drains. Contain all site runoff and dispose of waste fluid strictly in accordance with local environmental regulations and the chemical Safety Data Sheet (SDS).



CAUTION

SLIP & TRIP HAZARD: Unspooled delivery hoses and chemical runoff on site create severe trip risks and slippery footing for operators and the public. Route hose runs away from primary walkways, maintain a tidy workspace, and wear slip-resistant safety boots at all times. Always **cordon off the working area** and **utilize appropriate, visible warning signage** while the system is in operation



DANGER

ELECTROCUTION RISK (WATER-FED POLE SYSTEMS):

High-voltage overhead power lines can arc across air gaps to **any object** including carbon fiber, fiberglass, or wet poles. You must **perform a thorough risk assessment** before every job. If there is any risk of contact or proximity to power lines, **do not proceed**.



WARNING

ELECTROCUTION RISK (WEATHER): High-reaching poles act as lightning rods during electrical storms. In the event of a thunderstorm, **cease all work immediately**. Pack up all equipment and ensure that **no water-fed poles are raised above head height**.



WARNING

WIND & CHEMICAL DRIFT HAZARD: Softwashing sprays atomize liquid into fine droplets that are easily carried by air currents. Operating in breezy or windy conditions causes unpredictable chemical drift, risking direct facial contact, severe eye/skin burns, and property damage to nearby vehicles, pedestrians, or adjacent buildings. **NEVER** spray chemical solutions or softwash during windy conditions or even a mild breeze. Constantly monitor wind direction and cease spraying immediately if wind picks up or carries overspray toward unintended targets.

Mandatory Personal Protective Equipment (PPE)

To comply with HSE and COSHH regulations, operators must wear the following personal protective equipment whenever filling, operating, or flushing the Nomad Trolley.



CHEMICAL-RESISTANT OVERALLS

- **Specification:** Waterproof, liquid-tight chemical suit or hooded coverall (EN 14605 Type 3/4 rated).
- **Purpose:** Protects arms, torso, and legs against direct chemical splashes, spray drift, and liquid soak-through during mixing and application.



FULL-FACE SHIELD / SPLASH GOGGLES

- **Specification:** Indirect-vent chemical splash goggles (EN 166 3-rated) or a full-face safety visor.
- **Purpose:** Prevents chemical splash-back and airborne mists from making contact with the eyes and face, eliminating risks of chemical burns or blindness.



CHEMICAL RESPIRATOR

- **Specification:** Half-mask or full-face respirator equipped with ABEK1-P3 combination filters (BS EN 14387).
- **Purpose:** Filters out dangerous aerosolized mists, organic vapors, chlorine gas, and biocide particles produced during high-pressure spraying.



CHEMICAL-RESISTANT GLOVES

- **Specification:** Heavy-duty Nitrile or Neoprene gloves with extended gauntlets (EN ISO 374-1 rated).
- **Purpose:** Shields hands and wrists from corrosive active ingredients (e.g., Sodium Hypochlorite <20%, biocides) during chemical handling and hose coupling.

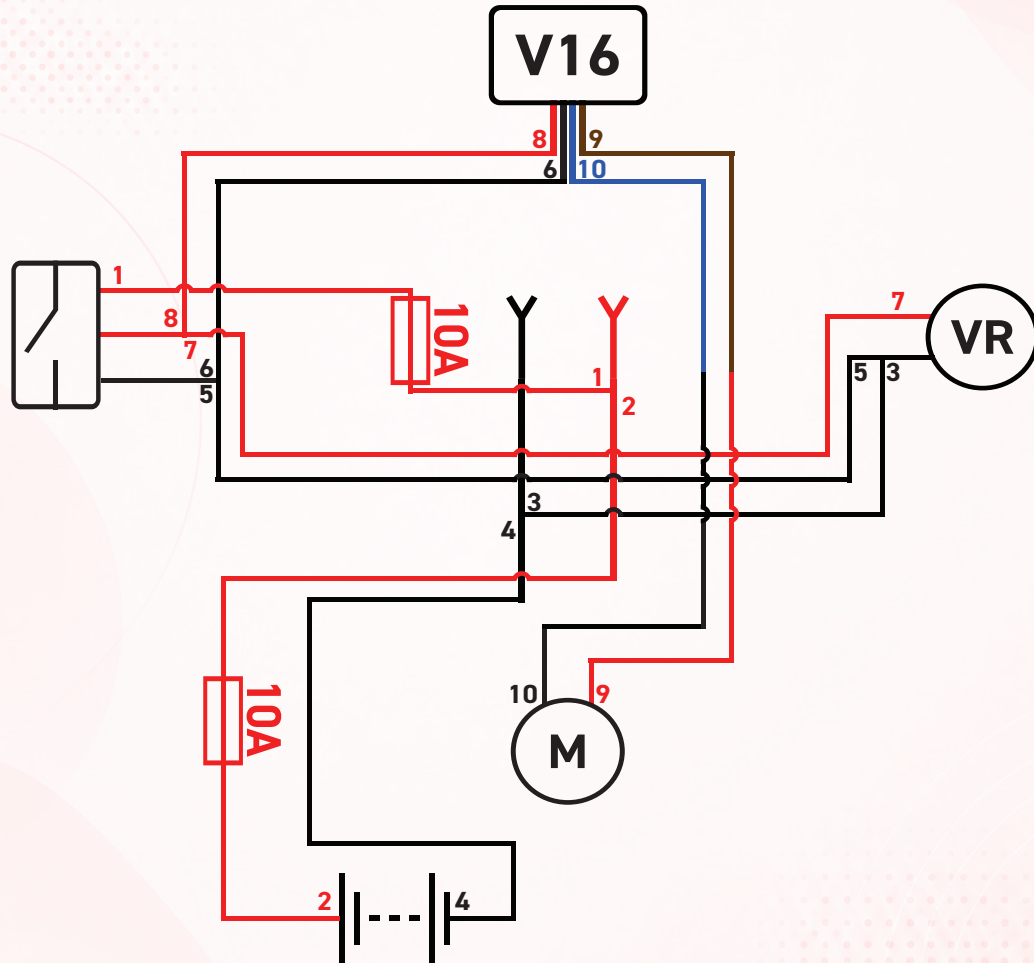


SAFETY BOOTS / WELLINGTONS

- **Specification:** Waterproof, chemical-resistant rubber boots with slip-resistant soles (SRC rated) and steel/composite toecaps.
- **Purpose:** Protects feet against chemical spills, chemical runoff, and slipping on wet or treated job site surfaces.

System Diagnostics Wiring Diagram & Legend

16



System Diagnostics Wiring Diagram & Legend

17

Wire ID No.	Wire Colour	Connection Path	Function / Circuit
1	Red	Anderson Splitter Junction (Y) → 10A Panel Fuse → Switch (Pin 1 (+))	Switched Circuit Power Feed
2	Red	Battery (+) Terminal → 10A Battery Fuse → Anderson Splitter Junction (Y)	Primary Protected 12V (+) Battery Lead
3	Black	Anderson Splitter Ground Junction (Y) → Voltmeter (-)	Common Negative / Voltmeter Ground Lead
4	Black	Battery (-) Terminal → Anderson Ground Splitter Junction (Y)	Primary Battery Ground Lead
5	Black	Switch Terminal (Pin 3 (-)) 5 → Common Ground Rail (3)	Switch Indicator / Common Ground
6	Black	Ground Rail → Bullet Connector → V16 Controller Terminal	Main V16 Controller Negative Ground Feed
7	Red	Switch (Pin 2 (+)) → Voltmeter (+)	Switched Positive Feed to Voltmeter Display
8	Red	Switch (Pin 2 (+)) → Bullet Connector → V16 Controller	Switched Positive Feed to V16 Controller
9	Brown → Red	V16 Controller (9, Brown) → Bullet Connector → Pump Motor (9, Red)	Variable Speed (+) Positive Output to Pump
10	Blue → Black	V16 Controller (10, Blue) → Bullet Connector → Pump Motor (10, Black)	Controlled (-) Negative Return from Pump

Fault Symptom	Blown Fuse	Root Cause & Behavior
System runs when plugged into charger, but dies as soon as unplugged.	Main Battery Fuse	Battery line is open. The charger is powering the panel directly, but no power reaches the battery or comes from it.
Voltmeter displays voltage, but V16 controller and pump are completely dead.	10A Controller Fuse	Pump load overload or short circuit popped the inline 10A fuse. The main panel still has battery power, but the V16 is isolated
Nothing turns on at all (plugged in or unplugged).	Both / Main Power Fault	Main battery fuse blown AND charger disconnected, or main rocker switch/ground failure



dE – Dead End

The message dE means the Dead End detection has shut off the controller and pump. This happens when the controller detects the water flow has been stopped. Reasons for this include:

- **Closed tap or valve** – this could be on your pole or hose reel.
- **Kinked hose or blockage** in a pipe
- **Calibration settings** are too sensitive.
- **False dead end detection** indicates that the calibration has been set too low. Follow the instruction to calibrate your controller in the Initial Setup section.



P5 – Pressure Switch

The appearance of the 'P5' message indicates that high pressure within the system has activated the pump's pressure switch. This issue is typically caused by one of the following factors:

- A prolonged restriction affecting the water flow (refer to the dead end section for possible reasons).
- Obstructed or small water jets, with a recommended minimum size of 1mm
- Wiring or connection faults, including poor connections, damage, or corrosion on wires and connectors.



BAt – Low Battery

“BA” flashing means the battery voltage has dropped below **11.5V** and requires charging immediately. It may be caused by the following:

Please note: The controller measures the voltage at the controller, if testing the battery with a voltmeter, there may be variance.

- A **restriction to the water flow** in the system which causes the pump to work harder. In turn this will draw more current and drag the voltage down.
- There is **corrosion or damage** to the wiring or connectors.
- Your battery may be **getting old and inefficient** and not holding its charge.
- Your pump may have **worn motor brushes** and draw higher current, Which will increase the voltage drop.



StP – Stop

If the voltage drops below 11.0V, the controller will shut down the system completely in order to **protect the battery**.

The manufacturer recommends that a battery is not run below 11.0V.



Err – Error

The ‘Err’ notification signifies a disruption during the AutoCal process. This fault typically arises if the motor remains disconnected or should the operator manually terminate the procedure by selecting the enter key.

- Verify all pump connections, ensuring each wire is firmly attached and the controller remains securely seated without any looseness.
- Inspection for physical damage, confirming that the cabling connecting the pump and controller remains intact and uncompromised.
- Calibration Reset: Should the error occur throughout AutoCal, it likely indicates the procedure was terminated prematurely. Power cycle the controller, establish your standard flow rate, and restart the calibration sequence to allow the system to re-register motor resistance levels.



OC – Over Current

The ‘OC’ message indicates that the pump is drawing excessive current. To prevent internal damage, the controller will automatically deactivate the system if the current reaches or exceeds 7.5 A.

- Several factors may contribute to an elevated current draw:
- Internal wear or physical damage to the pump motor.
- Improper calibration settings. If the pump is functioning normally, please refer to the initial setup instructions and recalibrate the unit.
- System flow restrictions paired with an incorrect calibration level.

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Nomad 45 Litre Chemical