TOVEN-RV T-CELL-15

TOVEN-RV T-15 Salt Cell Instruction Manual

For In-Ground Swimming Pool Chlorination Systems (40,000 Gallons)

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of your TOVEN-RV T-15 Salt Cell. This salt chlorinator cell is designed for in-ground swimming pools up to 40,000 gallons, providing a natural and effective method for pool sanitization. It is compatible with Hayward Salt System models W3T-CELL-15, T-CELL-15-SWP, and T-Cell-15, as well as Hayward AquaRite, AquaRite Pro, SwimPure Plus, TurboCell, AquaPlus, ProLogic, and OmniLogic systems.
Please read this manual thoroughly before installation and use to ensure proper function and longevity of the product.

2. Safety Information

Important Safety Instructions:

- Always disconnect power to the pool pump and chlorination system before performing any installation or maintenance.
- Ensure all electrical connections are made by a qualified electrician and comply with local codes.
- Keep the salt cell and all related components out of reach of children.
- Do not operate the salt cell if it is damaged or appears to be malfunctioning.
- Maintain proper pool chemistry as recommended by pool professionals. Incorrect chemical levels can damage the cell and pool equipment.
- Wear appropriate personal protective equipment (PPE) when handling pool chemicals or performing maintenance.

3. Product Overview

The TOVEN-RV T-15 Salt Cell is a key component of your pool's salt chlorination system. It utilizes electrolysis to convert dissolved salt into chlorine, which then sanitizes your pool water. This process results in soft, silky water with reduced

chlorine odor and irritation.

Figure 3.1: The TOVEN-RV T-15 Salt Cell, showing the main unit, electrical cable, and included cleaning tool.

3.1 Key Features

- **Capacity:** Suitable for in-ground pools up to 40,000 gallons.
- **Compatibility:** Direct replacement for Hayward W3T-CELL-15, T-CELL-15-SWP, and T-Cell-15. Compatible with Hayward AquaRite, AquaRite Pro, SwimPure Plus, TurboCell, AquaPlus, ProLogic, and OmniLogic control systems.
- **Material:** Constructed from high-grade, corrosion-resistant materials for durability and extended service life.
- **Connection:** Features a 10-pin connector for secure attachment to control systems.
- **Installation:** Designed for vertical or horizontal installation with a 2-inch swivel joint and a 13.5-foot cable.
- **Included Accessory:** Comes with a specialized cleaning tool to assist in maintenance.

Figure 3.2: Visual representation of the T-15 Salt Cell's compatibility with various Hayward chlorination systems.

Figure 3.3: Detailed view of the T-15 Salt Cell's components, including the flexible port gasket, cell ports, 10-pin connector, and the cleaning tool.

4. Installation

The TOVEN-RV T-15 Salt Cell is designed for straightforward installation. Follow these steps carefully:

1. **Power Disconnection:** Turn off all power to your pool pump and existing chlorination system at the circuit breaker. Verify that power is off before proceeding.
2. **Locate Existing Cell:** Identify the current salt cell in your pool's plumbing system.
3. **Drain System:** Ensure the pool plumbing system is drained sufficiently to prevent water spillage when removing the old cell.
4. **Disconnect Old Cell:** Disconnect the electrical cable from the existing salt cell. Unscrew the unions on both ends of the old cell and carefully remove it from the plumbing.
5. **Inspect Plumbing:** Check the O-rings and union connections for any wear or damage. Replace if necessary to ensure a watertight seal.
6. **Position New Cell:** The TOVEN-RV T-15 Salt Cell can be installed vertically or horizontally. Position the new cell in the same location as the old one, ensuring the flow arrow on the cell body matches the direction of water flow.
7. **Connect New Cell:** Attach the 2-inch swivel joints to the new salt cell and tighten them securely to the existing plumbing. Hand-tighten first, then use a wrench for a final snug fit, but do not overtighten.
8. **Connect Electrical Cable:** Plug the 10-pin connector of the new salt cell's cable into the control system. Ensure a firm and secure connection.
9. **Check for Leaks:** Restore power to the pool pump and system. Carefully inspect all connections for any leaks. If leaks are present, turn off power, drain, and re-tighten connections.
10. **System Configuration:** Refer to your chlorination system's control panel manual to ensure it recognizes the new T-15 cell and is configured correctly for optimal performance.

Figure 4.1: Illustration of the T-15 Salt Cell being installed into a typical pool plumbing system, highlighting the swivel joint connection.

4.2 How Salt Chlorination Systems Work

Understanding the process helps in maintaining your system:

Figure 4.2: A schematic diagram showing the five steps of how a salt chlorination system operates, from salt addition to chlorine production and sanitization.

1. Pool salt (NaCl) is added to the pool water.
2. The water dissolves the salt, creating a low-salinity solution.
3. The chlorinator control unit adjusts chlorine production based on settings.
4. The salt conversion cell (T-15 Salt Cell) uses electrolysis to turn salt into chlorine gas (Cl_2).
5. Chlorine gas (Cl_2) reacts with pool water to form hypochlorous acid (HOCl), the sanitizing compound.

5. Operation

Once installed, the TOVEN-RV T-15 Salt Cell works in conjunction with your control system to maintain optimal chlorine levels in your pool. For detailed operational settings, refer to your specific control system's manual (e.g., Hayward AquaRite, ProLogic).

- **Initial Startup:** After installation and power restoration, allow the system to run for a few hours to circulate water and stabilize salt levels.
- **Salt Level Monitoring:** Regularly check your pool's salt concentration using a reliable salt test kit. The ideal salt level for most systems is between 2700-3400 ppm (parts per million). Refer to your control system's manual for its specific recommended range.
- **Chlorine Output Adjustment:** Adjust the chlorine output percentage on your control system based on pool size, bather load, and environmental factors. Start with a moderate setting and adjust as needed to maintain a free chlorine residual of 1-3 ppm.
- **Water Chemistry:** Maintain balanced pool water chemistry, including pH (7.4-7.6), alkalinity (80-120 ppm), and cyanuric acid (CYA) levels (30-50 ppm). Proper water chemistry is crucial for the efficient operation and longevity of the salt cell.
- **Flow Requirements:** Ensure adequate water flow through the cell. The system typically has a flow sensor that will shut down chlorine production if flow is insufficient.

Figure 5.1: Benefits of using a salt chlorination system, including soft water, reduced irritation, and odor-free sanitization.

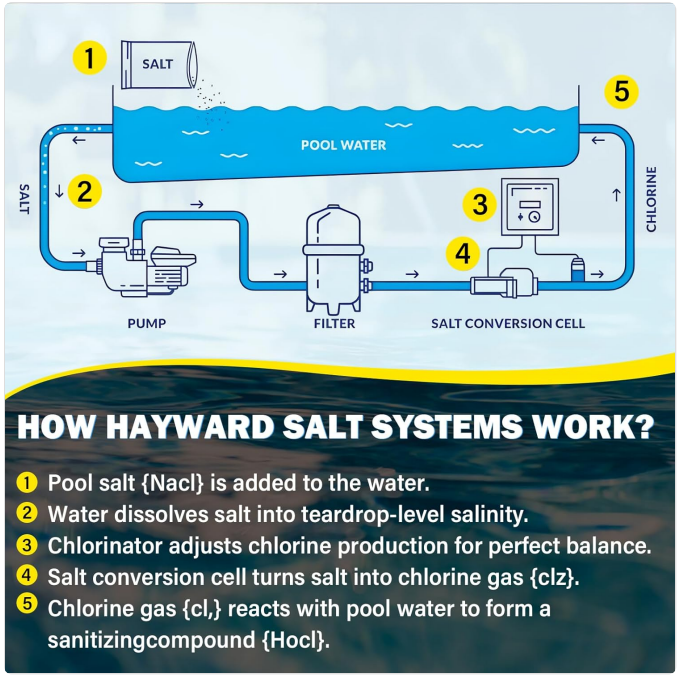

Figure 5.2: Visual comparison of pool water quality before and after treatment with the salt chlorination system.

6. Maintenance

Regular maintenance is essential to ensure the longevity and efficient operation of your TOVEN-RV T-15 Salt Cell.

6.1 Cell Cleaning

Over time, calcium and other mineral deposits can accumulate on the cell plates, reducing efficiency. The frequency of cleaning depends on water hardness and usage, but generally, inspect the cell every 3 months or if the system indicates a "Inspect Cell" or "Clean Cell" warning.

1. **Power Off:** Disconnect all power to the pool system at the circuit breaker.
2. **Remove Cell:** Unscrew the unions and carefully remove the salt cell from the plumbing.
3. **Inspect:** Look inside the cell for any scale buildup on the plates. A small amount of white, flaky deposits is normal, but heavy, hard deposits require cleaning.
4. **Use Cleaning Tool:** The included cleaning tool can be used to gently hook out loose debris such as hair or larger particles from inside the cell. Be careful not to damage the cell plates.
5. **Acid Wash (if necessary):** For heavy calcium buildup, an acid wash may be required.
    - Mix a solution of 1 part muriatic acid to 4 parts water in a plastic bucket.**Always add acid to water, never water to acid.**
    - Plug one end of the cell with a rubber stopper or cap.
    - Carefully pour the acid solution into the cell, ensuring the plates are submerged. Allow it to soak for 10-15 minutes, or until bubbling stops.
    - Pour out the acid solution and rinse the cell thoroughly with a garden hose.
    - **Caution:** Wear appropriate safety gear (gloves, eye protection) when handling muriatic acid. Dispose of the acid solution safely according to local regulations.
6. **Reinstall:** Reinstall the clean cell, ensuring proper orientation and secure connections. Restore power.

Figure 6.1: The specialized cleaning tool provided with the T-15 Salt Cell, demonstrating its use for removing internal debris without damaging the cell plates.

6.2 General Maintenance Tips

- Regularly test and balance your pool water chemistry.
- Ensure your pool pump and filter system are operating correctly to maintain proper water circulation and filtration.
- Inspect the cell cable and connector for any signs of wear or damage.
- During winterization, follow your pool system's guidelines for removing and storing the salt cell in a dry, protected area if freezing temperatures are expected.

7. Troubleshooting

This section addresses common issues you might encounter with your salt chlorination system. For specific error codes or advanced diagnostics, consult your control system's manual.

Problem	Possible Cause	Solution
Low Chlorine Output / No Chlorine Production	• Low salt level • Dirty salt cell (scale buildup) • Low water flow • Incorrect control system settings • Cold water temperature • Worn out cell	• Test salt level and add salt if needed. • Inspect and clean the salt cell (refer to Section 6.1). • Check pump, filter, and skimmer for obstructions. Ensure pump is running. • Verify chlorine output percentage on control panel. • Chlorine production decreases in colder water. Consider supplemental chlorination or adjust settings. • If cell is old and has been cleaned, it may need replacement.
"Check Cell" or "Clean Cell" Light/Message	• Scale buildup on cell plates • Low salt level • Faulty flow switch	• Clean the salt cell (refer to Section 6.1). • Test salt level and add salt if needed. • Inspect flow switch for debris or malfunction.

Problem	Possible Cause	Solution
Salt Reading Inaccurate	• Inaccurate test kit • Dirty cell • Control system calibration issue	• Use a different, reliable salt test method to verify. • Clean the salt cell. • Refer to your control system's manual for calibration procedures.
Water Leaks at Cell Connections	• Loose union nuts • Damaged O-rings	• Turn off pump, drain system, and re-tighten union nuts. • Inspect O-rings for cracks or wear; replace if necessary.

8. Specifications

Feature	Detail
Brand	TOVEN-RV
Model Number	T-CELL-15 (40,000 Gallon)
Pool Capacity	Up to 40,000 Gallons
Compatibility	Hayward W3T-CELL-15, T-CELL-15-SWP, T-Cell-15, AquaRite, AquaRite Pro, SwimPure Plus, TurboCell, AquaPlus, ProLogic, OmniLogic
Item Weight	5.63 pounds (2.56 Kilograms)
Product Dimensions	14.96 x 7.48 x 8.66 inches
Cable Length	13.5 feet
Connector Type	10-Pin
UPC	748743232295

9. Warranty & Support

The TOVEN-RV T-15 Salt Cell comes with a **1-Year Warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use and service.
For warranty claims, technical assistance, or any questions regarding the use and maintenance of your TOVEN-RV T-15 Salt Cell, please contact TOVEN-RV customer support. Contact information can typically be found on the product packaging or the seller's official website.
Please have your purchase receipt and product model information available when contacting support.