Wellmate WM-14/WM0180QC

Wellmate WM-14 / WM0180QC Captive Air and Retention Fiberglass Tank

Instruction Manual

1. Introduction

This manual provides comprehensive instructions for the installation, operation, and maintenance of your Wellmate WM-14 / WM0180QC Captive Air and Retention Fiberglass Tank. Please read this manual thoroughly before attempting to install or operate the unit. Proper installation and maintenance are crucial for optimal performance and longevity of the tank.

The Wellmate WM-Series tanks are designed for residential and commercial water systems, offering a durable, corrosion-resistant, and lightweight alternative to traditional steel tanks. Their fiberglass construction ensures reliability and reduces maintenance requirements.

2. Safety Information

WARNING: Failure to follow these safety instructions could result in serious injury or property damage.

- Always depressurize the system before performing any maintenance or installation procedures.
- Ensure all connections are secure and leak-free to prevent water damage.
- Do not exceed the maximum operating pressure specified for the tank.
- Wear appropriate personal protective equipment (PPE) during installation and maintenance.
- Consult a qualified professional for installation if you are unsure about any steps.
- Keep children and unauthorized personnel away from the installation area.

3. Product Overview

The Wellmate WM-14 / WM0180QC tank is a high-performance captive air and retention tank featuring advanced composite construction. Its design prioritizes durability, efficiency, and ease of maintenance.

Key Features:

- **Quick Connect:** Designed for easier field servicing and installation.
- **Replaceable Air Cell:** The interior air cell can be replaced, extending the tank's service life without needing to replace the entire unit.
- **Corrosion-Proof Construction:** Fiberglass composite material prevents rust, making it ideal for various environments, including coastal regions.
- **Lightweight:** Significantly lighter than steel tanks, simplifying transport and installation.
- **Greater Drawdown:** Offers higher efficiency compared to similarly sized steel tanks.

Internal Components:

This diagram illustrates the key internal and external components of the Wellmate WM-Series tank. It highlights the durable interior air cell, the seamless inner shell made of high-density polyethylene, the outer shell constructed from continuous fiberglass strands sealed with epoxy resin, the sturdy molded polymeric base, and the custom-molded high-impact PVC bottom inlet/outlet drain.

- **Durable Interior Air Cell:** Fully replaceable and constructed of heavy-gauge engineered polymer.
- **Seamless Inner Shell:** Molded from premium, high-density polyethylene.
- **Outer Shell:** Composed of continuous fiberglass strands sealed with high-grade epoxy resin.
- **Sturdy, Molded Polymeric Base:** Corrosion and impact proof.
- **Bottom Inlet/Outlet Drain:** One-piece drain custom molded of high-impact PVC.

4. Setup and Installation

The Wellmate WM-14 / WM0180QC tank is designed for quicker and less costly installation, often requiring only one person. Follow these general steps for proper setup:

1. **Unpack and Inspect:** Carefully remove the tank from its packaging. Inspect for any shipping damage.
2. **Choose Location:** Select a suitable location that is level, protected from freezing temperatures, and provides adequate space for maintenance.
3. **Prepare System:** Ensure the water supply to the system is shut off and the system is depressurized.
4. **Connect Plumbing:** Connect the tank to your water system using the 1 1/4 inch male NPT inlet/outlet. Ensure all

connections are tight and use appropriate sealants. The Quick Connect feature simplifies this process.

5. **Pre-charge Pressure:** Before filling the tank with water, set the air pre-charge pressure. The recommended pre-charge pressure is typically 2 PSI below the pump's cut-in pressure. Use an accurate air pressure gauge for this step.
6. **Fill System:** Slowly open the main water supply valve to allow water to fill the system and the tank. Check for leaks at all connections.
7. **Restore Power:** Once the system is filled and leak-free, restore power to the pump.
8. **Verify Operation:** Monitor the pump's cycling and tank pressure to ensure proper operation.

5. Operating Instructions

The Wellmate WM-14 / WM0180QC tank operates by maintaining a cushion of air that compresses as water enters the tank, storing pressurized water. When water is drawn from the system, the compressed air pushes the water out, reducing pump cycles.

- **Automatic Operation:** Once properly installed and pre-charged, the tank operates automatically with your water pump system.
- **Pressure Monitoring:** Periodically check the system pressure to ensure it is within the desired operating range.
- **Pump Cycling:** The tank's primary function is to reduce the frequency of pump cycles, which extends pump life and saves energy. A properly sized and pre-charged tank will result in longer pump run times and fewer starts.

6. Maintenance

Wellmate tanks are designed to be virtually maintenance-free due to their corrosion-proof construction. However, periodic checks are recommended to ensure continued optimal performance.

- **Check Air Pre-charge:** Annually, or if pump cycling becomes frequent, check the air pre-charge pressure. To do this, shut off the water supply, drain the system completely, and then check the air pressure at the Schrader valve. Adjust if necessary to 2 PSI below the pump's cut-in pressure.
- **Inspect for Leaks:** Periodically inspect all plumbing connections for any signs of leaks.
- **Replace Air Cell:** The replaceable air cell feature allows for easier field servicing. If the air cell is compromised (e.g., waterlogged tank, constant pump cycling despite correct pre-charge), it can be replaced without replacing the entire tank. Consult a professional for air cell replacement.
- **Clean Exterior:** Clean the exterior of the tank with mild soap and water as needed. Avoid abrasive cleaners.

7. Troubleshooting

Refer to the following table for common issues and their potential solutions:

Problem	Possible Cause	Solution
Pump cycles too frequently (short cycling)	Low or no air pre-charge in the tank; Waterlogged tank (compromised air cell)	Check and adjust air pre-charge pressure. If issue persists, the air cell may need replacement.
Water seeping from top (near air valve)	Compromised air cell or valve seal	Inspect the air valve for damage. If the air cell is compromised, it will need replacement.

Problem	Possible Cause	Solution
Water leaking from bottom of tank	Damaged bottom inlet/outlet connection or tank base	Inspect the connection for proper sealing. If the tank itself is damaged, contact support.
No water pressure	Pump failure; System leak; Tank completely waterlogged	Check pump operation. Inspect entire system for leaks. Check tank pre-charge and air cell integrity.

8. Specifications

The Wellmate WM-14 / WM0180QC Captive Air and Retention Fiberglass Tank offers the following specifications:

WM Series Quick Connect Performance Data

Model Number	Capacity gal / liter	Maximum Operating Pressure psi / kPa / Bar	Drawdown 30/50 Setting** gal / liter	Diameter* inch / cm	Overall Height* inch / cm	Height* inlet/ outlet to floor inch / cm	System Connection	Assembly Weight* lb / kg	Pallet QTY.
WM-4 / WM0060 QC	14.5 / 55	125 / 862 / 8.6	4.5 / 17.0	16 / 41	26 / 66	1 3/4 / 4.4	1" male NPT	16.9 / 7.6	9
WM-6 / WM0075 QC	19.8 / 75	125 / 862 / 8.6	6.1 / 34.4	16 / 41	32 / 81	1 3/4 / 4.4	1" male NPT	20.85 / 9.5	9
WM-9 / WM0120 QC	29.5 / 112	125 / 862 / 8.6	9.1 / 34.4	16 / 41	44 / 112	1 3/4 / 4.4	1" male NPT	28.80 /13.0	9
WM-12 / WM0150 QC	40.3 / 153	125 / 862 / 8.6	12.5 / 47.3	16 / 41	57 / 145	1 3/4 / 4.4	1" male NPT	35.05 /15.9	9
WM-14WB / WM0180 QC	47.1 / 178	125 / 862 / 8.6	14.6 / 55.3	21 / 53	41.3 / 105	2 1/4 / 5.7	1 1/4" male NPT	46.27 / 21.0	4
WM-20WB / WM0235 QC	60.0 / 227	125 / 862 / 8.6	18.5 / 70.0	24 / 61	41.5 / 105	2 1/4 / 5.7	1 1/4" male NPT	52.87 / 24.0	4
WM-23 / WM0300 QC	79.6 / 301	125 / 862 / 8.6	24.6 / 93.1	21 / 53	62 / 157	2 1/4 / 5.7	1 1/4" male NPT	71.07 / 32.3	4
WM-25WB / WM0330 QC	86.7 / 328	125 / 862 / 8.6	26.8 / 101.5	24 / 61	55 1/4 / 140	2 1/4 / 5.7	1 1/4" male NPT	77.22 / 35.0	4
WM-35WB / WM0450 QC	119.7 / 453	125 / 862 / 8.6	37.0 / 140.1	24 / 61	74 1/4 / 189	2 1/4 / 5.7	1 1/4" male NPT	102 / 46.4	N/A

This table provides detailed performance specifications for various Wellmate WM Series Quick Connect models. For the WM-14/WM0180QC model, it lists a capacity of 47.1 gallons (178 liters), a maximum operating pressure of 125 psi (8.6 bar), a drawdown of 14.6 gallons (55.3 liters), a diameter of 21 inches (53 cm), an overall height of 41.3 inches (105 cm), an inlet/outlet to floor height of 2 1/4 inches (5.7 cm), a 1 1/4 inch male NPT system connection, and an assembly weight of 46.27 lbs (21.0 kg).

- **Model Number:** WM-14/WM0180QC
- **Capacity:** 47.1 gallons (178 liters)
- **Maximum Operating Pressure:** 125 psi (8.6 bar)
- **Drawdown:** 14.6 gallons (55.3 liters)
- **Diameter:** 21 inches (53 cm)
- **Overall Height:** 41.3 inches (105 cm)
- **Inlet/Outlet to Floor Height:** 2 1/4 inches (5.7 cm)
- **System Connection:** 1 1/4 inch male NPT
- **Assembly Weight:** 46.27 lbs (21.0 kg)
- **Manufacturer:** Wellmate
- **Item Weight:** 62 pounds (shipping weight)

9. Warranty and Support

Wellmate tanks are known for their durability and long service life. An extended labor warranty option may be available to homeowners for added peace of mind. For specific warranty details, please refer to the documentation provided at the time of purchase or contact Wellmate customer support.

For technical assistance, replacement parts, or warranty claims, please contact your authorized Wellmate dealer or visit the official Wellmate website for support resources.