



Gravity Tank

Installation & Operating Instructions

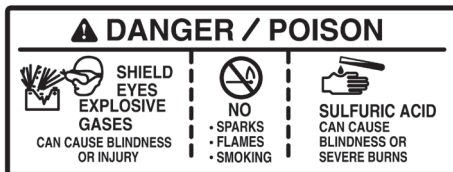


- BA-MS-600
- BA-MS-700
- BA-MS-702
- BA-MS-703

General Information and Precautions

This publication provides detailed instructions for installing a gravity tank. Thoroughly review this document before any installation procedures are performed.

The following safety statements relate to specific safety issues and must be read, understood, and heeded before a gravity tank is installed. Failure to do so could result in personal injury and/or property damage.



DANGER

- Battery – Explosive gases! Do not smoke. Keep sparks and flames away from the vehicle and service area. Ventilate when charging or operating vehicle in an enclosed space. Wear a full face shield and rubber gloves when working on or near batteries.
- Battery – Poison! Contains acid! Causes severe burns. Avoid contact with skin, eyes, or clothing.

Antidotes:

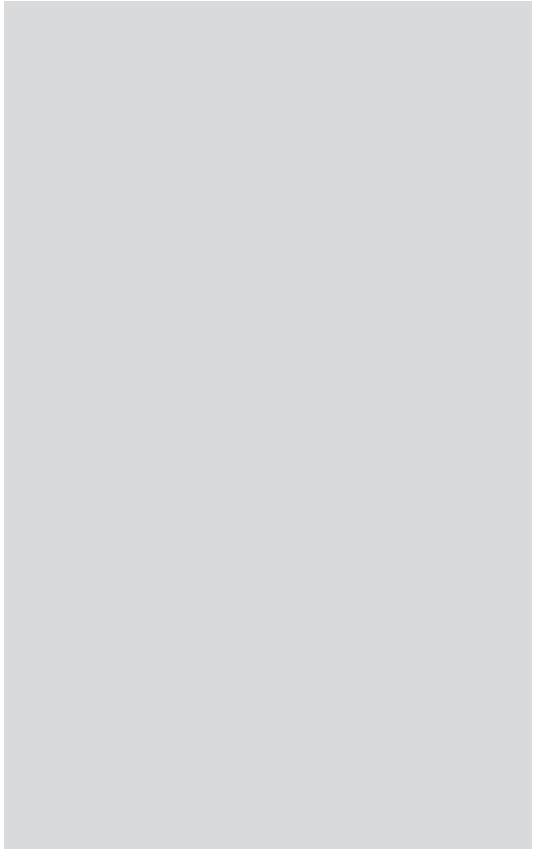
- External: Flush with water. Call a physician immediately.
- Internal: Drink large quantities of milk or water. Follow with milk of magnesia or vegetable oil. Call a physician immediately.
- Eyes: Flush with water for 15 minutes. Call a physician immediately.

WARNING

- Follow the procedures exactly as stated in this instruction, and heed all DANGER, WARNING, and CAUTION statements in this instruction as well as those on the vehicle and battery charger.
- Only trained technicians should service or repair a gravity tank. Anyone doing even simple repairs or service should have knowledge and experience in plumbing, electrical, and mechanical repair. The appropriate instructions must be used when performing maintenance, service, or accessory installation.
- Prior to servicing the vehicle or leaving the vehicle unattended, turn the key switch OFF, remove the key, and chock the wheels.
- Wear safety glasses or approved eye protection when servicing any part of a gravity tank. Wear a full face shield and rubber gloves when working on or near batteries.
- Do not wear loose clothing or jewelry such as rings, watches, chains, etc., when servicing the vehicle or battery charger.
- Moving parts! Do not attempt to service the vehicle while it is running.
- Use insulated tools when working near batteries or electrical connections. Use extreme caution to avoid shorting of components or wiring.
- If wires are removed or replaced, make sure wiring and wire harness are properly routed and secured. Failure to properly route and secure wiring could result in vehicle malfunction, property damage, personal injury, or death.

Package Contents

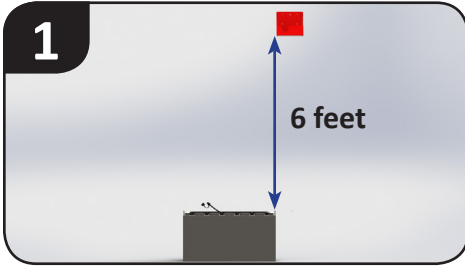
- A. 4 mounting screws
- B. 4 washers
- C. 4 anchors
- D. Bracket
- E. Tank
- F. Hose 1 (fill hose?)
- G. Hose 2 (supply hose?)



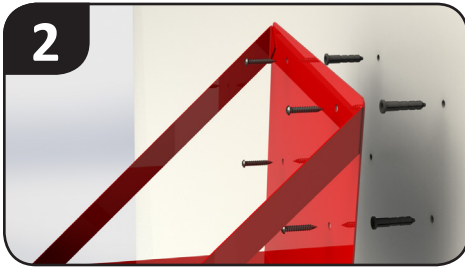
User Supplied Items and Tools

- Drill with 1/4" bit
- Screwdriver (phillips?)

Installation



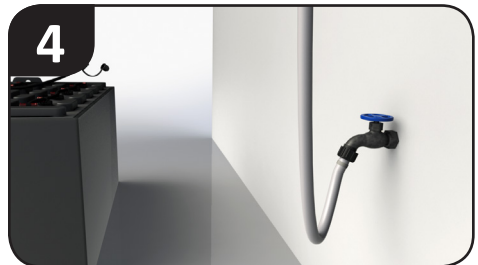
Before drilling holes for your mounting hardware, please note that the bottom of the tank **MUST** be a **MINIMUM** of six feet above the **TOP** of your batteries in order for your Millennium SPW™ System to work properly.



The bracket/tank should be mounted near a hose bibb that can be dedicated to the water supply. The wall anchors require a $\frac{1}{4}$ " hole diameter.



Place tank on bracket and rotate black elbow 90° so it is facing down. (Nut may need to be re-tightened to prevent leaking.) Connect hose with quick coupler as shown to side with black elbow. Slide red locking ring forward.



(This step for P/N BA-MS-700 only.) Connect hose with swivel garden hose threads to side with gray elbow. The end with the filter screen should be connected to the facility hose bibb.

Watering Procedures

Water After Charge

Electrolyte levels drop during discharge and rise during charge. In addition, charging generates heat, fluid expansion and explosive gases. Watering a battery before charge (or with a low charge level) can lead to boil over resulting in potential damage of the watering system, battery and vehicle. Water, when needed, must be added to a fully charged battery. Prior to charging, there must be sufficient water to cover the plates. If the battery has been discharged (partially or fully), the water level should still be above the plates.

Watering Intervals

Watering intervals are dependent on the local climate, charging methods, application, and age of batteries. Flow-Rite recommends that new batteries be checked once a month and older batteries be checked weekly until you get a feel for your water consumption rate.

Typically for a heavy use application, watering a maximum of once per week is recommended. For light use applications, water once per month. Do not water a battery that has been sitting for an extended period of time with no activity (non-use or not on charge) such as a battery that has sat idle over the weekend. It is best to water a warm battery that has just been fully charged.

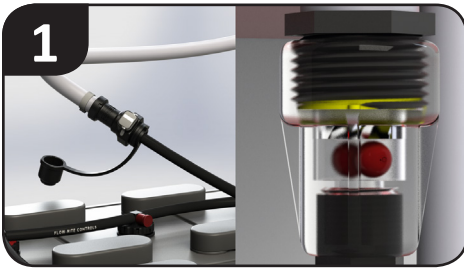
Important

Water quality is important to maintain the life of your battery and watering system. Always use water that meets the quality requirements of your battery's manufacturer.

Operation

For successful operation of your Single Point Watering system, always:

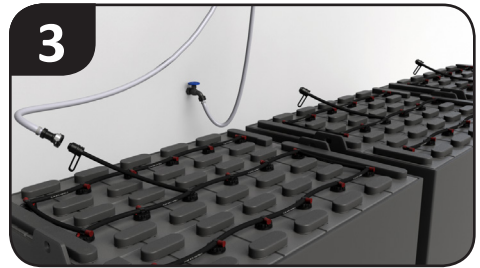
1. Only use Flow-Rite approved equipment.
⚠ Warning! Use of unapproved equipment or modification of approved equipment can lead to system failure and will void your warranty.
2. Always follow Flow-Rite's required watering procedures.
3. Perform regular scheduled maintenance!
⚠ Warning! Only fill batteries after they have been fully charged and require water.



Remove the dust cover mate couplers. When connection is made the red balls in the flow indicator will start rotating to indicate water is flowing into the battery cells.



After the flow indicator balls stop rotating, immediately disconnect by pushing the button and pulling the male quick coupler out.



Replace the dust cover and repeat on the next battery.

Regular Maintenance

Your gravity tank requires regular preventative maintenance on at least a quarterly basis.

1. Check all screens.

Clean or replace all strainers as necessary. Failure to do so can cause a reduction in the water pressure and flow rates needed to operate the system properly.

2. Inspect the condition of all tubing connections, red end caps, swivel T's, and couplers.

Make sure that all parts are in good working condition, secure, leak free, and properly connected. The coupler must have an O-ring and dust cover properly attached.

3. Check Electrolyte Levels.

Flow-Rite recommends checking the electrolyte level in each cell for accuracy after the system has been installed and operational for three months.

Seasonal Maintenance

Water Supplies

Water supplies must be drained and stored in an empty state if they will be exposed to freezing temperatures. Failure to do so can cause permanent damage.

Watering Systems

If you have vehicles that are taken out of service or put into storage for a period of 6 weeks or longer, your single point watering system will require seasonal maintenance. Check you system instructions for details.

Operating Specifications

Operating Requirement of SPW system

Flow-Rate	2.0-5.0 gallons per minute* 7.6-19.0 Litres per minute
Pressure Range	3.0 - 35.0 PSI (no flow, static) 0.21-2.4 bar
Temp. Range	Freezing - 150° F 1 - 65.5° C

Water Supply Operating Requirements

Inlet Pressure Range	40-100 PSI (no flow, static)
Temp. Range	33 - 150° F 1 - 65.5° C

All product specifications and requirements should be met for proper operation of your Flow-Rite SPW system. Contact your battery supplier or Flow-Rite Controls if you have any questions regarding product specifications or how to verify a water supply.

**Flow rate should be measured at the end of a purger (female / male coupler combination).*



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