



Gravity Tank

Installation, Operation, & Maintenance Manual



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

General Information & Precautions

This publication provides detailed instructions for installing the single point watering system kits with part numbers beginning with “BG”. Thoroughly review this document before any Single Point Watering (SPW) installation procedures are performed.



The following safety statements must be read, understood, and heeded before a kit 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 vehicle and service areas. Ventilate when charging or operating vehicle in an enclosed space. Wear safety glasses 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 manual as well as those on the vehicle and battery charger.
- Only trained technicians should service or repair the single point watering system. 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 when servicing the vehicle.
- Wear safety glasses or approved eye protection when servicing any part of the watering system. Wear safety glasses 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

Mounting Screws (4)

Tank

Washers (4)

Fill Hose

Anchors (4)

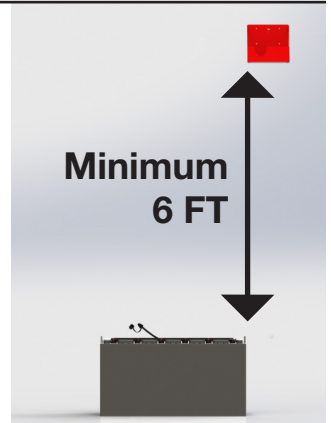
Supply Hose

Bracket

Installation

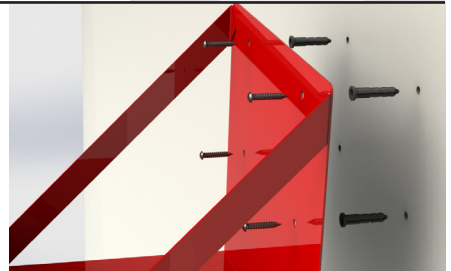
Step 1

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.



Step 2

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



Step 3

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.



Step 4

(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.



Operation

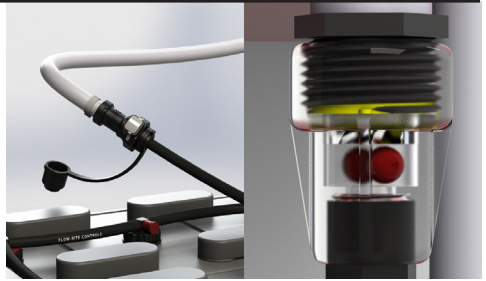
For successful operation of your water supply, always:

- Use Flow-Rite approved equipment.
- Only fill batteries after they have been fully charged and require water.
- Follow Flow-Rite's required watering procedures.
- Perform regular scheduled maintenance!

⚠ Warning! Use of unapproved equipment or modification of approved equipment can lead to system failure and will void your warranty.

Step 1

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.



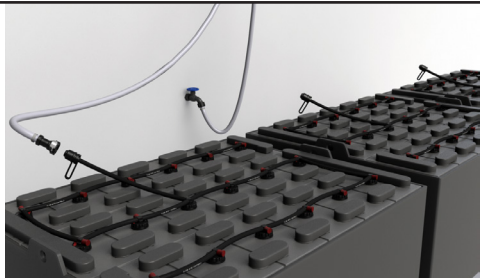
Step 2

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



Step 3

Replace the dust cover and repeat on the next battery.



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 to the watering system, battery, and vehicle.

When needed, water must only be added to a fully charged battery. If the battery has been neglected and water levels have fallen below the plates, water should be manually added to just cover the plates. After the battery has been charged, you can finish filling with the watering system.

Watering Intervals

Watering intervals are dependent on the local climate, charging methods, application, and age of batteries. Flow-Rite recommends checking consumption rates manually or with the optical indicator (when equipped). New batteries should be checked once a month and older batteries weekly until water consumption rates are known.

Typically for a heavy use application, watering a maximum of once per week is recommended, and for light use applications 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.*

Regular Maintenance

Your single point watering system requires regular preventative maintenance on at least a quarterly basis.

1. Check all screens and/or filters on water supplies

Clean or replace all filters & line strainers as necessary. Failure to do so can cause a reduction in the water pressure and flow rates needed to operate the system properly. A filter screen can be found on the inlet of all regulators, and a line strainer on all supply hoses. Pump powered water supplies include a strainer on all suction hoses. For deionizers, be sure to replace the filter cartridges as indicated by the water quality light. Consult your water supply's manual for detailed instructions.

2. Inspect the condition of all tubing, connections, and couplers.

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

3. 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. To winterize the SPW system simply drain any remaining water from the feed tube. Additionally the following steps need to be followed when bringing your vehicle back into service.

1. After the batteries have been fully charged/equalized, connect the system to its water supply for 3-5 seconds then disconnect regardless of whether or not the batteries are completely full.
2. Return the vehicle back to normal operation.
3. Place the vehicle back into its regular watering schedule (waiting at least one week until next watering).

Operating Specifications

Operating Requirement of SPW system

Flow Rate:	2.0 - 5.0 gallons per minute* 7.6 - 19.0 liters per minute
Pressure Range:	3.0 - 35.0 PSI (no flow, static) .21 - 2.4 bar
Temp. Range:	Freezing - 150° F Freezing - 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 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).

Troubleshooting

In the event that a valve does not shut off, qualify water supply to ensure that it is producing a minimum of 2 GPM (measured through the purger). If the issue persists and the water supply qualifies, call for service. If it does not qualify, perform maintenance procedures on the water supply and re-qualify. If it does not qualify after performing maintenance, call for service.

Warranty

1 Year Limited Warranty for Water Supply Products

Flow-Rite Controls warrants to Purchaser that its product, the Flow-Rite Gravity Tank, will be free of all defects in material and workmanship for one (1) year after the date of purchase. If within one year of the date of purchase, the Gravity Tank, fails to perform due to a manufacturing defect, Flow-Rite Controls will repair or replace the Gravity Tank, free of charge.

For the full warranty document, please go to www.flow-rite.com/resources/battery-care-literature/

If you have more questions, email customerservice@flow-rite.com or call 616-583-1700.



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