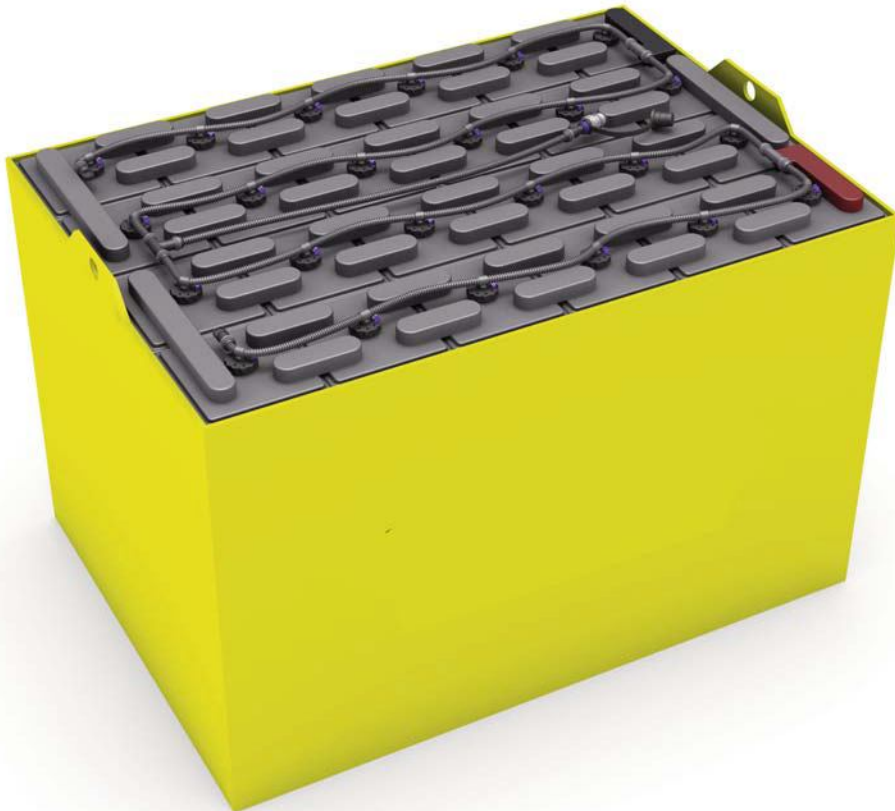




# Installation, Operation & Maintenance Manual

For Model:

*Millennium SPW™ - using Snake™ Tubing*



BL-282  
6/25/2009

## Kit & Master Pack Contents



Millennium SPW™  
Valve



6 swivel Segment



Tee



Segment  
Connector



End Caps



Instruction  
Manual



Coupler with  
Feed Tube



Battery Refill  
Record

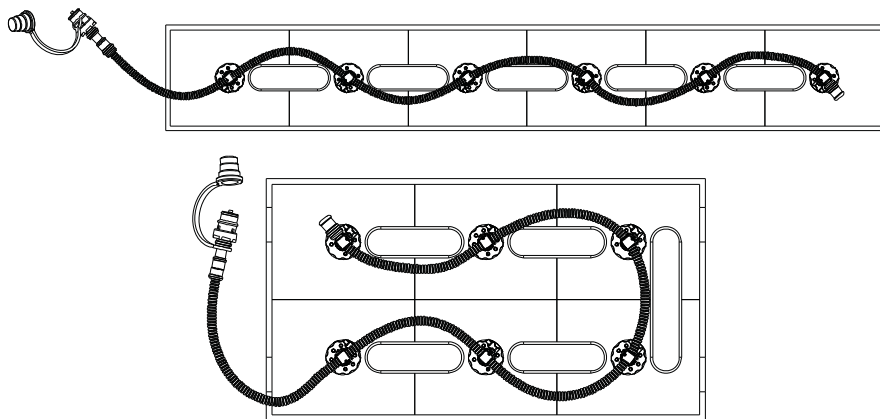


Spanner Tool

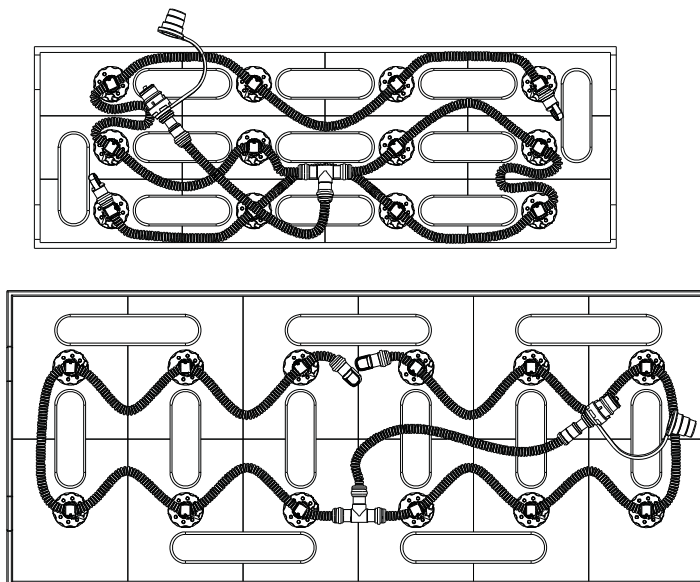
	6-Cell Kit	12-Cell Kit	18-Cell Kit	24-Cell Kit	Master Pack
Millennium Valves	6	12	18	24	60
6 Swivel Snake Segment	1	2	3	4	10
End Cap	1	2	2	2	10
Segment Connector	0	0	1	2	4
Tee	0	1	1	1	5
Coupler and Feed Tube	1	1	1	1	0
Spanner Tool	1	1	1	1	0
Battery Refill Record	1	1	1	1	0
Instruction Manual	1	1	1	1	1

# Installation Diagrams

## 6 Cell / 12 Volt Layout

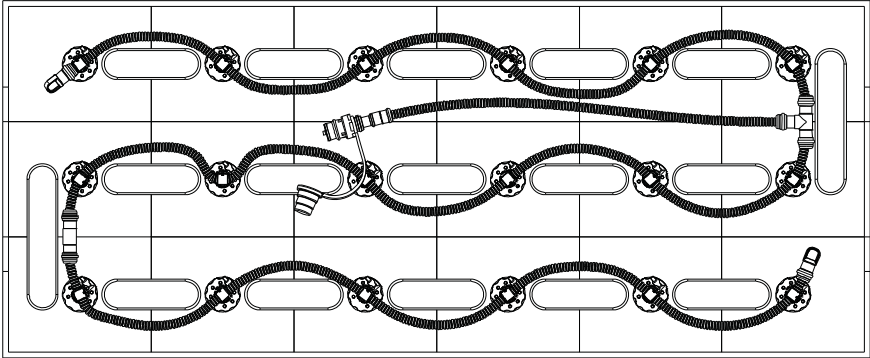


## 12 Cell / 24 Volt Layout

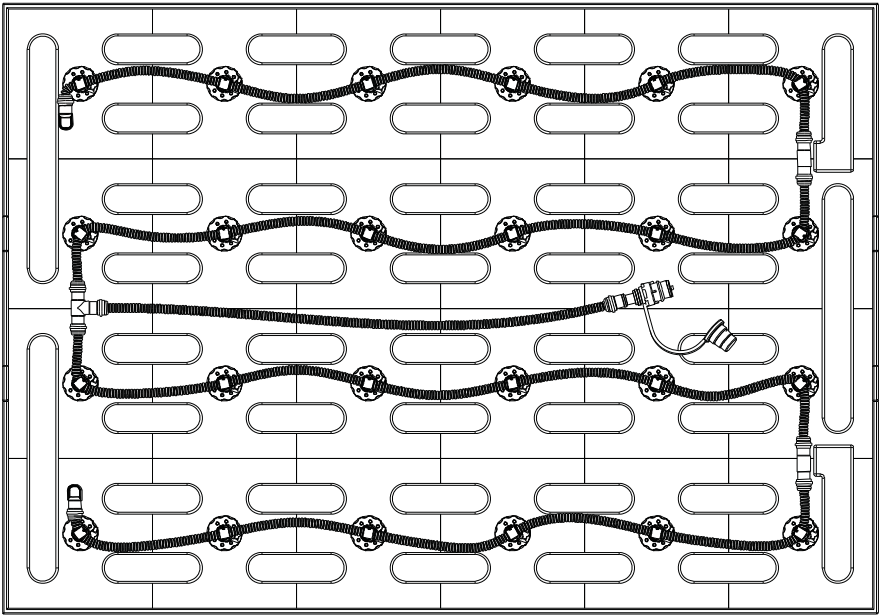


# Installation Diagrams

18 Cell / 36 Volt Layout



24 Cell / 48 Volt Layout



## Watering Procedures

### 1. 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 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.

### 2. 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, we recommend watering a maximum of once per week, and for light use applications once per month. You should 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!

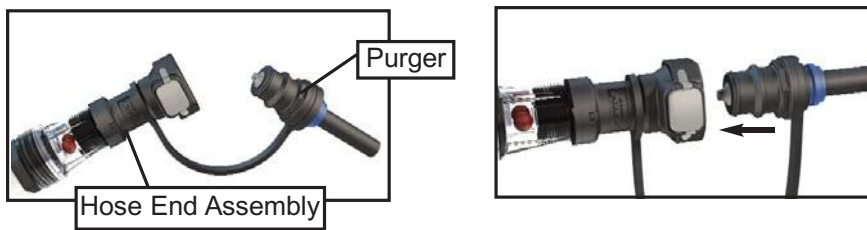
**Warning!** Only fill batteries after they have been fully charged, and require water.

**Important:** If you are using a Hand Pump or Gravity Feed water supply to fill your Millennium SPW™ system, please refer to their instructions for proper operation!

### Step 1 - Qualify Water Supply

- Check flow rate through included purger by mating purger with hose end assembly. Verify that a minimum of 2 GPM (Gallons per minute) is achieved. This can be measured with a bucket and a stop watch or a watch with a second hand.

**Note:** Should a 2 GPM flow rate not be produced refer to the troubleshooting guide in your water supply's instruction booklet.



### Step 2 - Remove Dust Cover



## Operation Continued

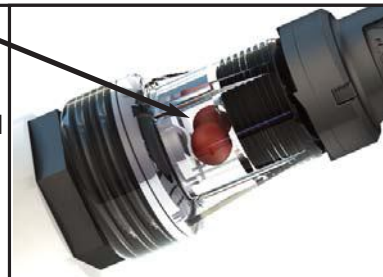
### Step 3 - Mate Couplers

- Insert the male coupler on the spw system into the female coupler on the end of the water supply.



### Step 4 - Observe Flow Indicator

- The red balls inside the flow indicator will begin to spin indicating that water is flowing into the battery. As the cells fill and the valves shut off, the balls will begin to spin slower until they come to a stop. This indicates that all valves have shut off and filling is complete.



### Step 5 - Disconnect

- When the balls stop spinning, and not before, immediately disconnect the couplers by depressing the push button on the female coupler. If the water supply is left connected after the filling process is finished it could lead to an overflow. Disconnecting before the balls come to a complete stop will lead to underfilled cells.



**CAUTION:** If at any time during the filling process you have a valve failure disconnect immediately and refer to the troubleshooting section.

### Step 6 - Replace Dust Cover

- Place dust cover back over the male coupler. Do not push cover past the large barb on the coupler.

**Tip:** If you slightly squeeze the dust cover when sliding it over the coupler it will create a vacuum allowing it to hold tightly.



## Operating Specifications

### Operating Requirement of SPW system

Flow-Rate:	2-5 gallons per minute*
Pressure Range:	3-35 PSI (no flow, static)
Temp. Range:	Freezing - 150 <sup>o</sup> F
	Freezing- 65.5 <sup>o</sup> C

### Water supply Operating Requirements

Inlet Pressure Range	40-100 PSI (no flow, static)
Temp. Range	33 - 150 <sup>o</sup> F
	1 - 65.5 <sup>o</sup> C

All product specifications 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).

## Troubleshooting

If you notice reduced run time on your vehicle check to see that each cell is filled to the proper level. In the event that a cell is not showing water, connect system to its water supply. Recheck the level of low cells. If they are still low call for service.

In the event that a valve does not shut off, qualify water supply to ensure that it is producing 2GPM (measured through the purger). If the water supply qualifies, call for service. If it does not qualify, perform Maintenance procedures and requalify. If it does not qualify after performing Maintenance call for service.