



Philadelphia Scientific®  
industrial battery innovation



# Philadelphia Scientific® Water Injector *Spider* System™

## Installation & Operating Instructions

**What does a Water Injector Spider System™ include?**



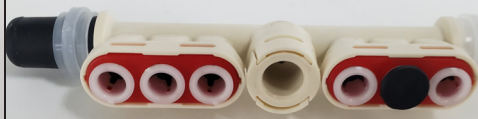
One Injector Spider valve per cell.



Manifold(s\*)



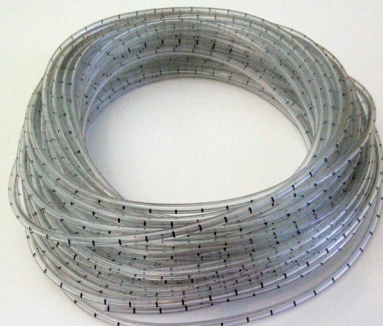
Tubing Collars (on the thick tubing) and Ratchet Clamps. Either can be used to secure tubing to the manifold.



Tubing Plugs (if applicable)



Water Input Assembly & Tubing



Clear PVC Tubing (one foot of tubing per cell)

\*(if applicable)

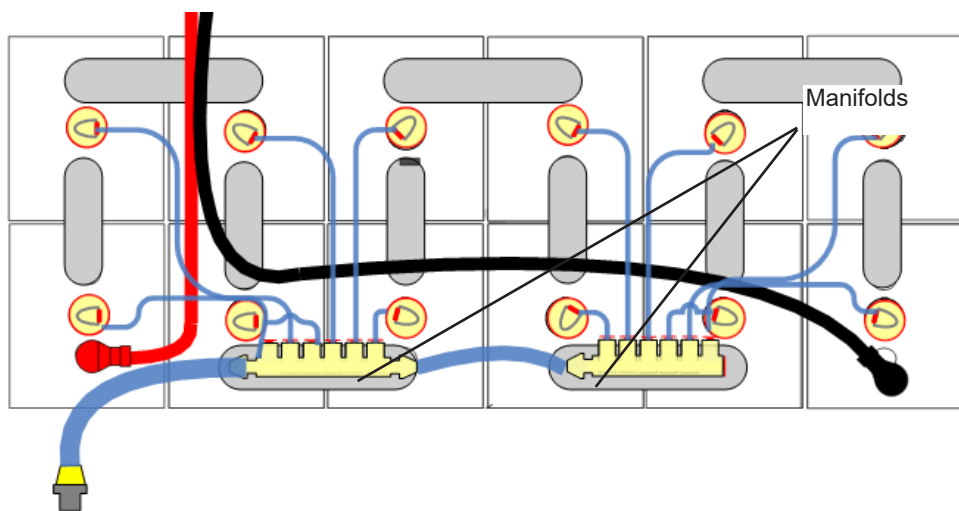


**HEALTH AND SAFETY PRECAUTIONS**

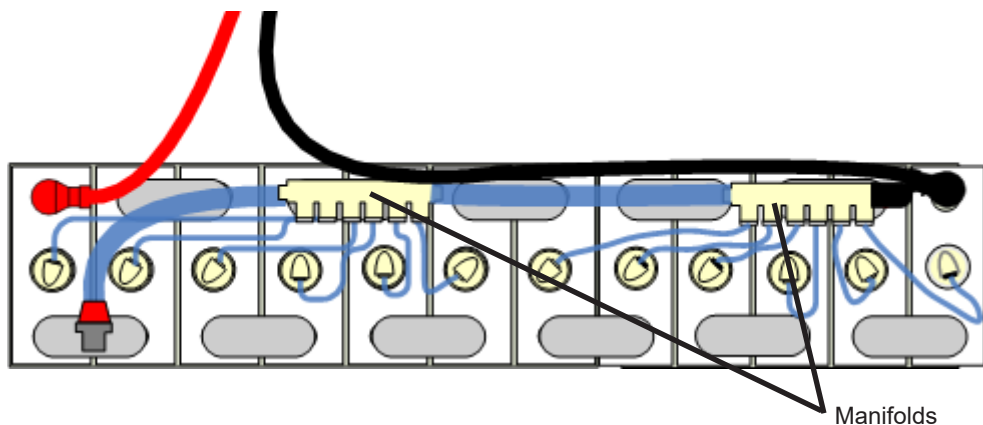


Batteries contain sulphuric acid, always wear approved protective clothing (gloves, goggles and apron).

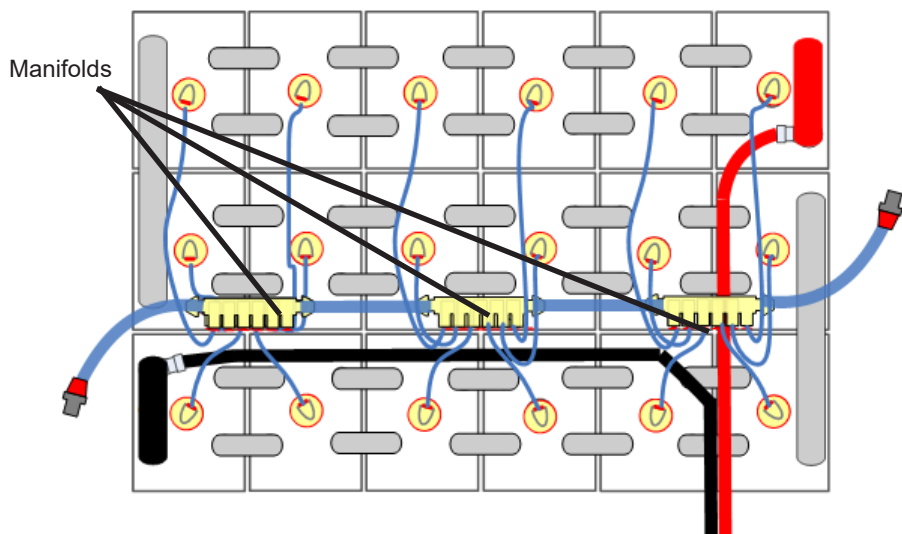
The following are example installations.



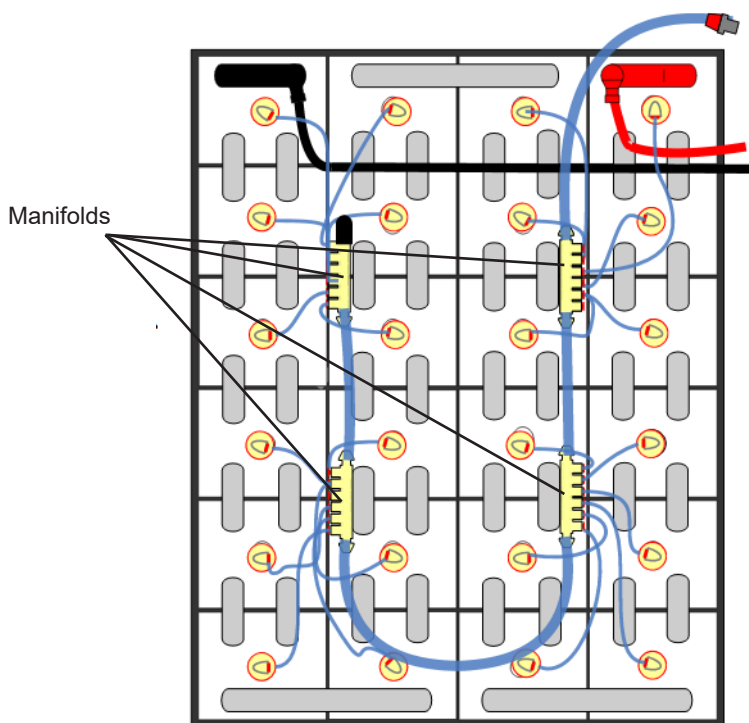
**Example 12-Cell Layout**



**Example 12-Cell Layout**

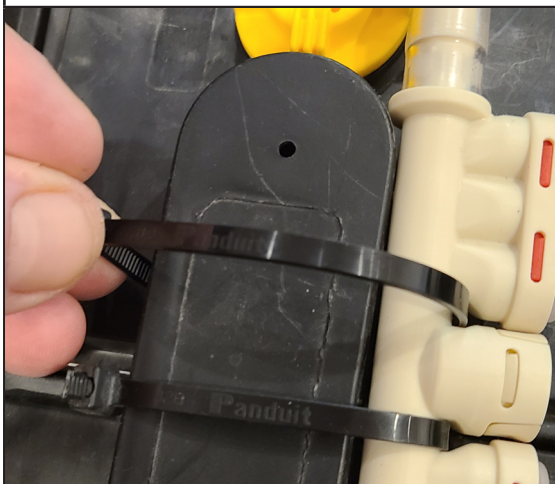


**Example 18-Cell Layout**

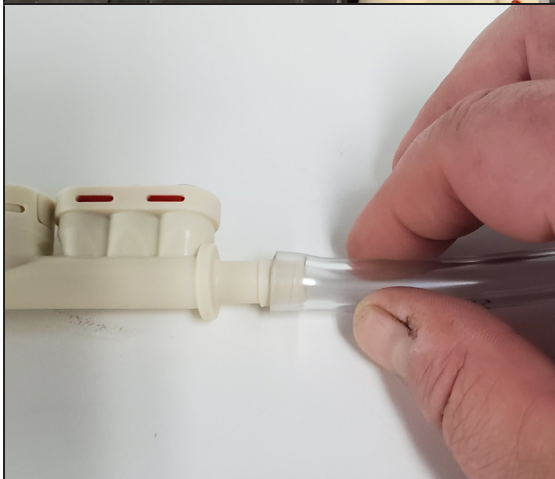


**Example 24-Cell Layout**

## Installation

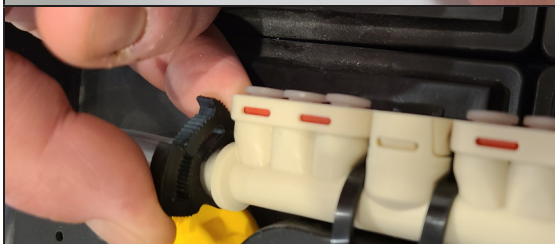


Install and secure the manifold(s) to inter-cell connector(s). Trim any excess cable tie.



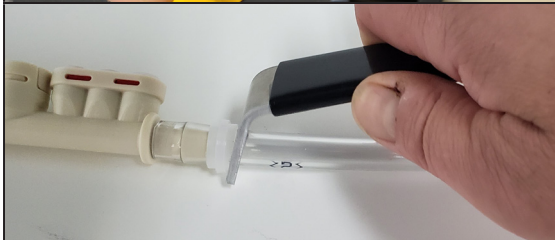
If the system has more than one manifold, the manifolds must all be connected to the input assembly. Push the tubing over the barb.

Note: There can never be more than four manifolds connected to a single input!



Use the black clamp to secure the tubing to the manifold

or

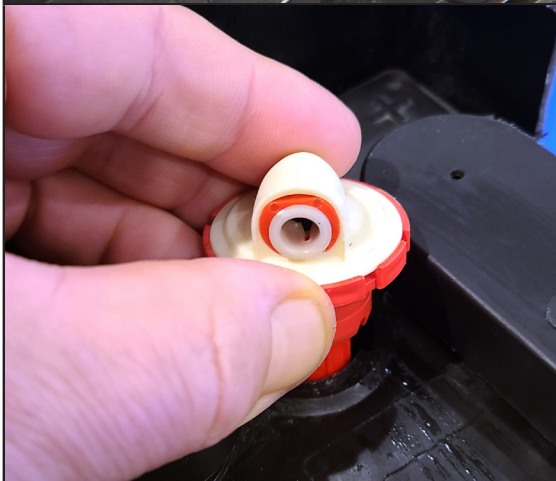


Slide the tubing collar over the barbed fitting and use the Collar Tool (PN# INJ-601) to secure.

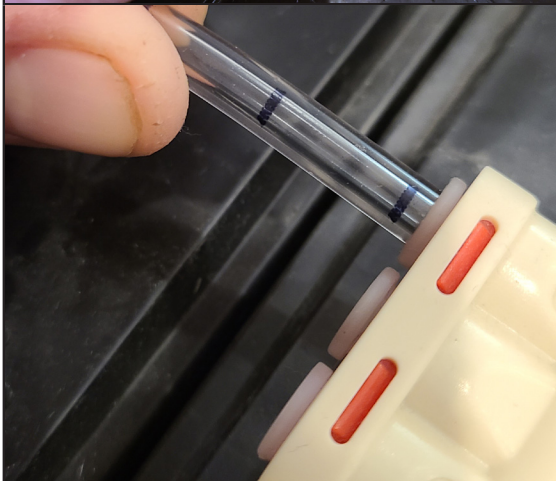
## Installation (continued)



Remove the vent caps



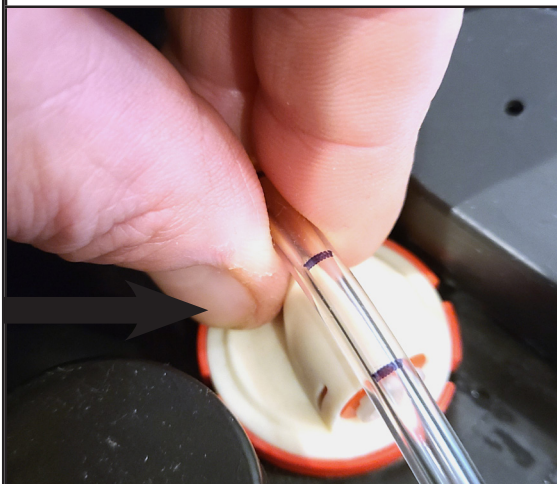
Snap the Injector Spider Valves into each vent opening and orient them toward the manifolds.



Insert the ¼ inch (6.3mm) tubing into the manifold. Ensure the end of the tubing is cut squarely.

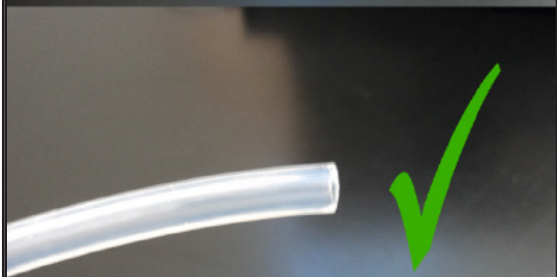
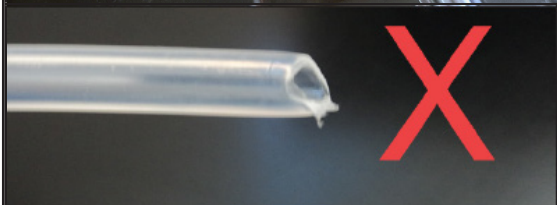


## Installation (continued)

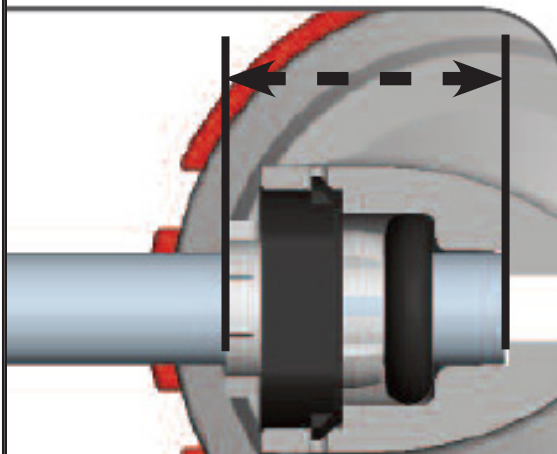


Lay the tubing on top of the valve and mark the tubing where it comes over top of the tubing port . This will give a length of tubing that will fully engage the o-rings when installed correctly.

**Do not run tubing under inter-cell connectors.**

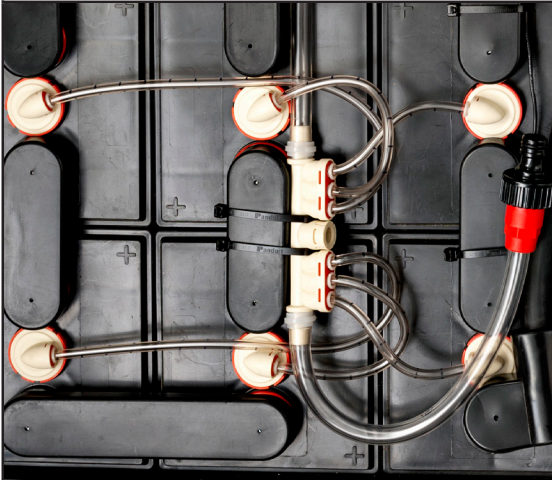


Use a Tubing Cutter (PN# FLT-093), scissors or a utility knife to make a **square cut** to the tubing.

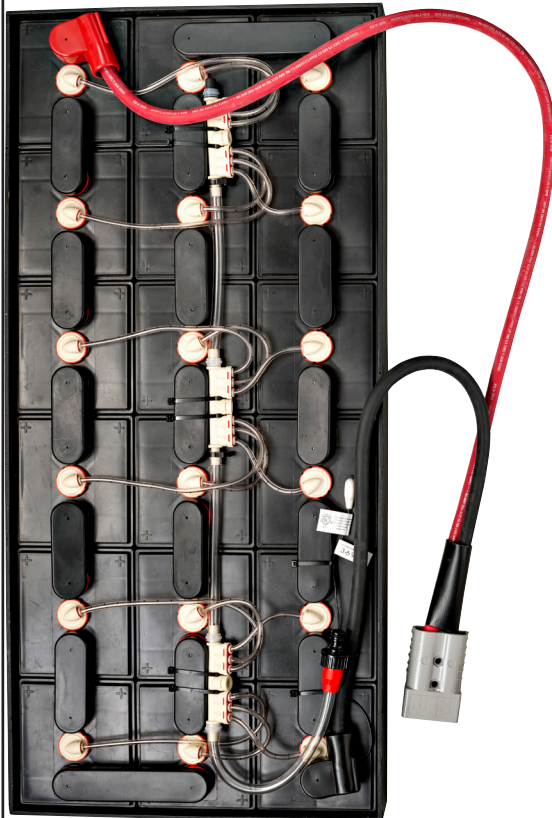


Be sure the tubing is **COMPLETELY** inserted. 5/8 inch (15.8 mm) of tubing is inserted into the gripper. This is represented by the distance between the lines on the tubing.

## Installation (continued)



Repeat until all of the valves are connected to the manifold ports. If all of the ports in the manifold are not used, use tubing plugs in unused ports (e.g. 20-cell kits)



After all cells are connected, review the layout to insure that all of the valves are connected to the manifold(s) and that normal battery operations will not affect the system.



## Operation:



Only use a Factory Authorized Water Supply or if not the Water Source must be qualified with a Flow-Checker (PN# INJ-FC)



Connect the Instant Valve Pro™ to the quick connect on the tubing of the Water Injector Spider System installed on the battery.



Squeeze the lever completely to fill the battery. **Do Not Partially Squeeze the Lever.**






Watch the spinner mounted on the Instant Valve Pro. When it stops spinning, the filling is completed (usually about 15 seconds). Note: The spinner may not come to a complete stop, especially in larger systems. The battery is filled when the spinner slows enough to clearly see the inner blades/vanes.



Release the lever and then disconnect the Instant Valve Pro from the Water Injector Spider System.

**Factory Authorized Water Supplies for the  
Water Injector Spider System™**

		
<b>HydroCart Mini</b> (PN# INJ-MINI)	<b>HydroCart Max</b> (PN# INJ-HCT)	<b>Pump Controller 2</b> (PN# INJ-712)

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