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## PHILADELPHIA SCIENTIFIC WATER INJECTOR SYSTEM

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Since 1983, Philadelphia Scientific has brought advanced technology solutions to the industrial battery industry. They specialize in the research, design, development and manufacturing of products for motive power, standby and automotive batteries in addition to tools that maximize battery performance. They are the holders of an extensive patent inventory that reflects the creative and inventive spirit of their employees.

As the creator and manufacturer of many market-leading products, they continuously develop new innovations to serve the industry. This excellence in engineering, combined with their passion for quality, has made Philadelphia Scientific one of the most trusted brands in its marketplace today.

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## WATER INJECTOR SYSTEM

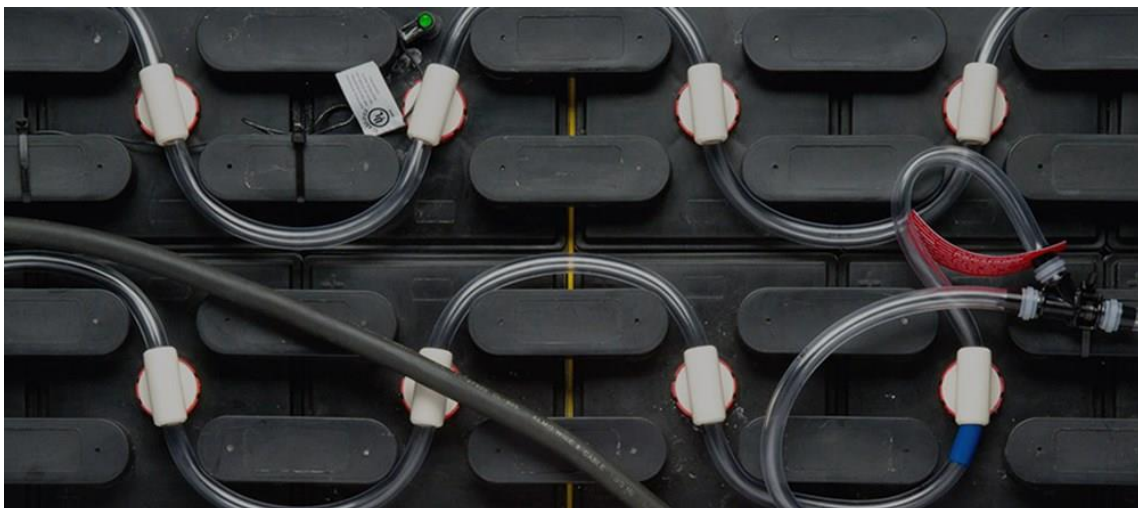
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The Water Injector System™ is the world's fastest and most reliable way to add water to industrial batteries. Filling a battery takes just 15 seconds, which means that you can fill 8 batteries in the time that it takes to fill 1 battery with other systems! There are two versions of the system available to meet your needs: the Water Injector Classic System™ and the Water Injector Spider System™. Both systems feature legendary reliability and speed of fill but differ in the way that the water is delivered to each Injector valve and the way they fit on top of the battery.

The system saves money in two ways. First, it cuts labor costs, often paying for itself within its first year of operation. Second, it extends the life of each expensive battery onto which it is installed due to improved quality of watering.

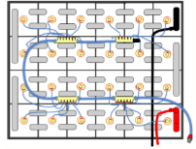

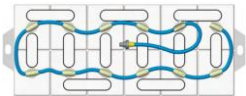
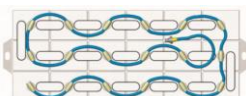
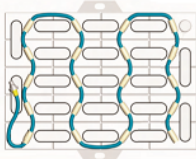
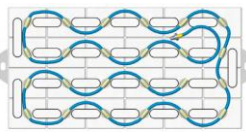
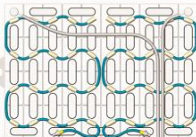
The system also improves safety and environmental cleanliness. There is no need to peer into cells to inspect levels as with manual filling. And water Injectors automatically fill each cell to the correct level, so there is no overfilling and no electrolyte spillage during charging. Did you know that each time a battery boils over it loses 3% of its capacity? That equates to 15 minutes of run time for each and every boil over! And the only way to recover the capacity is to perform an expensive acid equalization process, which typically costs more than the Water Injector System.

Because of its robustness and reliability the Water Injector System is the preferred system for all Opportunity and Fast/Rapid charge applications.














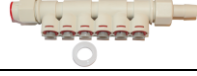


	Water Injector Spider System	Water Injector Classic System
		
Layout	Parallel	Serial
Input/Operating Pressure	25 to 35 psi	
Acceptable Filling Temperature	35° to 160°F	
Valve Body Material	Polypropylene	
Flow Rate	8 to 10 gpm per string	
System Exposure Temperature	-20° to 160°F	
Tubing Material	Proprietary flexible PVC	
Fitting Type (Compatible with Vent Opening Types)	US 1/4 Turn & DIN	
Maximum number of valves per input coupling	24	
Input Hose Size	1/2 in	
Max Valve Height above Vent	0.85 in	1.10 in





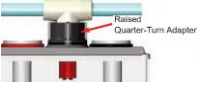




Example Layout	Ordering code	Description
	INJ-LP20ED	SPIDER Injector – 20 cell – DIN Adapter
	INJ-LP24ED	SPIDER Injector – 24 cell – DIN Adapter
	INJ-S6ED	Water Injector Classic – 6 cell string – Self-Assembly
	INJ-S6EDX	Water Injector Classic – 6 cell string – Self-Assembly – Extended
	INJ-P6ED	Water Injector Classic – 6 cell string – Prepunched
	INJ-P6EDX	Water Injector Classic – 6 cell string – Prepunched – Extended
	INJ-S12ED	Water Injector Classic – 12 cell string – Self-assembly
	INJ-S12EDX	Water Injector Classic – 12 cell string – Self-assembly – Extended
	INJ-P12ED	Water Injector Classic – 12 cell string – Prepunched
	INJ-P12EDX	Water Injector Classic – 12 cell string – Prepunched – Extended
	INJ-S18ED	Water Injector Classic – 18 cell string – Self-assembly
	INJ-S18EDX	Water Injector Classic – 18 cell string – Self-assembly – Extended
	INJ-P18ED	Water Injector Classic – 18 cell string – Prepunched
	INJ-P18EDX	Water Injector Classic – 18 cell string – Prepunched – Extended
	INJ-S20ED	Water Injector Classic – 20 cell string – Self-assembly
	INJ-S20EDX	Water Injector Classic – 20 cell string – Self-assembly – Extended
	INJ-P20ED	Water Injector Classic – 20 cell string – Prepunched
	INJ-P20EDX	Water Injector Classic – 20 cell string – Prepunched – Extended
	INJ-S24ED	Water Injector Classic – 24 cell string – Self-assembly
	INJ-S24EDX	Water Injector Classic – 24 cell string – Self-assembly – Extended
	INJ-P24ED	Water Injector Classic – 24 cell string – Prepunched
	INJ-P24EDX	Water Injector Classic – 24 cell string – Prepunched – Extended
	INJ-AJS40PS	Water Injector Classic – 2x20 cell string – Self-assembly
	INJ-AJS40PL	Water Injector Classic – 2x20 cell string – Self-Assembly – Extended

Remarks:

- Extended Version: recommended for larger cells and for batteries with already high water level to avoid overflow during charging
- Standard length is 2 inches, extended version is 2.75 inches (measured from underside of disk to the end of the injector)
- Classic version comes standard with DIN connection
- For the self-assembly you need Injector Tooling INJ-311 to punch the holes in the tubing (see table spare parts and accessories)

Spare parts and accessories			
	Ordering code	Description	For
	INJ-495	Injector Tubing ½", intermediate, clear wall, per m	Classic Spider
	FLT-072	Injector Tubing ¼" for Spider Systems	Spider
	INJ-311	Injector Tooling: Hole Punch for Tubing	Classic
	INJ-585	Connection Injector String Male 3/4" - 10 mm – with Cap	Classic Spider
	INJ-CP	Connection Injector String Male 3/4" - 10 mm	Classic Spider
	INJ-FC	Flow checker	Classic Spider
	INJ-214	Injector Repair coupling for injector system	Classic Spider
	INJ-608	Injector/Stealth Float Collar (25 pieces)	Classic Spider
	INJ-615	Wye Fitting, with Collars	Classic Spider
	INJ-TK-TP	Tape for Water Injector installation To prevent the tubing from moving during use, wrap six turns of installation tape (INJ-202) around the tubing, directly behind the first Water Injector	Classic
	INJ-212	Ratchet Clamp	Classic Spider
	INJ-664	Injector Manifold 6-Port for Injector Spider System	Spider
	INJ-670	Injector Manifold 6-Port Inline for Injector Spider System	Spider
	INJ-LP1	Injector Spider	Spider

	INJ-LP1D	Water Injector Spider, for DIN Vent Openings	Spider
	INJ-253	Injector DIN Vent Adapter Push-in	Classic
	INJ-L1	Individual Injector with Moulded Dust Cap Bayonet (Quarter turn)	Classic
	INJ-L1A	Water Injector, Extended Length, for Standard Bayonet Vent Openings	Classic
	INJ-L1AD	Water Injector, Extended Length, for DIN Vent Openings	Classic
	INJ-L1D	Water Injector, for DIN Vent Openings	Classic
	INJ-CL1	Clamp Lock Water Injector, for Standard Bayonet Vent Openings	Classic
	INJ-CL1A	Clamp Lock Water Injector, Extended Length, for Standard Bayonet Vent Openings	Classic
	INJ-CL1AD	Clamp Lock Water Injector, Extended Length, for DIN Vent Openings	Classic
	INJ-CL1D	Clamp Lock Water injector, standard length for DIN Vent Openings	Classic
	INJ-TL1	Clamp Lock Terminating Water Injector, for Standard Bayonet Vent Openings	Classic
	INJ-TL1A	Clamp Lock Terminating Water Injector, Extended Length, for Standard Bayonet Vent Openings	Classic

	INJ-TL1AD	Clamp Lock Terminating Water Injector, Extended Length, for DIN Vent Openings	Classic
	INJ-TL1D	Clamp Lock Terminating Water Injector, for DIN Vent Openings	Classic
	INJ-536	Raised Quarter Turn Adapter (6 pcs)	Classic
	INJ-447	Terminating Injector – Push-in	Classic
	INJ-530	Terminating Injector Extended Diffuser – Push-in	Classic
	INJ-NC-006	Clamp Lock Water Injector, Nicad With Flame arrestor adaptor	Classic
	INJ-NC-007	Terminating Water Injector, Nicad With Flame arrestor adaptor	Classic