



# HydroLink™ Watering System with Clampless Tubing



## Installation, Operation & Maintenance Manual

This manual provides detailed instructions for safely installing, operating and maintaining the HydroLink™ Watering System and/or related water supply. Thoroughly review this document before installing or using the HydroLink™ Watering System.

## Safety Instructions and Warnings

Please read and comply with all of the following safety-related instructions and warnings prior to installing, operating and maintaining the HydroLink™ Watering System. Failure to comply with these instructions may result in serious personal injury, death and/or property damage.

### **DANGER! – EXPLOSIVE GASES**



- Batteries can generate explosive gases! Do not smoke in the vicinity of any batteries.
- Keep sparks and flames away from the batteries, vehicle and service area.
- Ventilate when charging batteries or operating a vehicle in an enclosed space.
- Wear a full face shield and rubber gloves when working on or near batteries.

### **DANGER! - POISON / ACID**



- Lead-acid batteries contain acid which is a poison and can cause severe burns!
- Do not transport, store, handle or operate batteries except in an upright position.
- Wear a full face shield and rubber gloves when working on or near batteries.
- In the event of an acid spill, 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.

## General Information and Precautions

### **DANGER! – RISK OF ELECTRIC SHOCK**



- The electricity stored in batteries can cause electric shock resulting in serious bodily injury or death, even at low voltages.
- Use insulated tools when working near batteries or electrical connections.
- Use extreme caution to avoid shorting of components or wiring.
- Do not wear metal jewelry such as rings, watches, chains, etc., when servicing the vehicle, watering system, battery or battery charger.
- Ensure that the work area is dry when servicing the vehicle, watering system, battery or battery charger.

### **GENERAL SAFETY WARNINGS**

- Follow the procedures exactly as stated in these instructions, and heed all DANGER and WARNING statements in these instructions, as well as those on the vehicle, battery, watering system, and battery charger.
- Only trained technicians should service or repair the HydroLink™ Watering System. The instructions in this manual must be followed when installing, operating and maintaining the HydroLink™ Watering System and/or related water supply.
- Prior to servicing any vehicle or leaving any vehicle unattended, turn the key switch OFF, remove the key, and chock the wheels.
- Moving parts! Do not attempt to service any vehicle while it is running
- Do not wear loose clothing when servicing any vehicle, battery, watering system or battery charger.
- Hot! Do not attempt to service hot engine, exhaust system, or motor. Failure to heed this warning could result in severe burns.
- If wires are removed or replaced, make sure wiring and wire harness are properly routed and secured.
- Wear safety glasses or other approved eye protection when installing or servicing any part of the HydroLink™ Watering System.

## HydroLink™ Watering System Contents



6-volt HydroLink™ shown

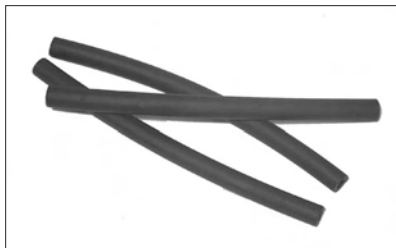
| Kit Size | Battery Type    | Quantity of HydroLink™ Vents |
|----------|-----------------|------------------------------|
| 48-volt  | 12-volt, 6-volt | 8                            |
| 48-volt  | 8-volt          | 6                            |
| 36-volt  | 12-volt, 6-volt | 6                            |
| 24-volt  | 12-volt, 6-volt | 4                            |
| 12-volt  | 12-volt, 6-volt | 2                            |



Coupler & Dust Cover: Quantity = 1



Red End Caps: Quantity = 9



Clampless Tubing: Quantity = Varies on kit size

**Before Installing your HydroLink™ Watering System Kit  
(Kit purchased separate from your Trojan batteries)**

1. Remove the vent caps and inspect the fill wells.

**DANGER! – POISON / ACID**

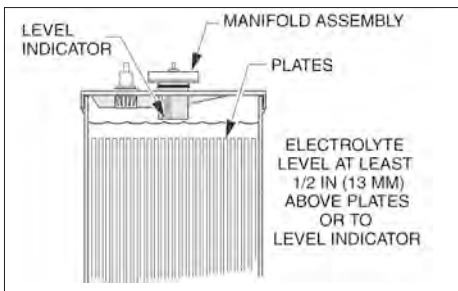
The battery contains acid, and may release explosive gases. Wear eye protection at all times. No smoking, sparks or open flames near batteries. In the event of an acid spill, avoid contact with skin, eyes and clothing.



2. Check electrolyte level:

**a) If electrolyte level is below the plates:**

Manually add enough water to cover the plates. (Refer to Trojan Battery's User Guide, Table 3 for Water Impurity Limits, available at [www.trojanbattery.com](http://www.trojanbattery.com).) Charge batteries to 100% full charge, before using the HydroLink™ Watering System.



**WARNING!** – Do NOT overfill the cell. Adding too much water to the cell will cause the battery to overflow acid during the charging process causing corrosion and potential injury.

**b) If electrolyte level is inside of the fill well, the cell is overfilled**

- Do NOT install the system at this time. Wait for the electrolyte levels to go down normally (under battery usage). After levels are normal, charge batteries to 100% full charge and continue onto installation.

## HydroLink™ Installation

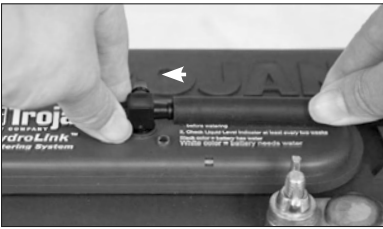
### If Pre-Installed on Your Trojan Batteries

If you purchased your Trojan batteries pre-installed with HydroLink™ vents, then please follow the two steps outlined below:

#### **STEP 1**

##### **Install Clampless Tubing**

Connect all the HydroLink™ vents together with the included clampless tubing. When cutting the tubing ensure there is enough slack to create a slight bend in the tubing. Place the feed tube with coupler attached on a HydroLink™ vent that is near the middle of the plumbing so that water can be distributed to all batteries evenly.



#### **STEP 2**

##### **Install Red End Caps**

Place a red end cap on each of the remaining barbs.



**Your HydroLink™ Watering System is now ready for use.**

## HydroLink™ Installation (continued)

### Installing a HydroLink™ Watering System on Your Trojan Batteries

**IMPORTANT:** Make sure to following instructions on Page 4 before installing

#### **STEP 1**

**Remove Current Vent Caps and Insert HydroLink™ Vents.**



#### **STEP 2**

**Firmly Press HydroLink™ Vents Down.**

Ensure HydroLink™ vents are completely seated to avoid electrolyte spillage.

**WARNING!** Press in the HydroLink™ vent with your hands only - do not use a hammer.



#### **STEP 3**

**Install Clampless Tubing**

Connect all the HydroLink™ vents together with the included clampless tubing. When cutting the tubing ensure there is enough slack to create a slight bend in the tubing. Place the feed tube with coupler attached on a HydroLink™ vent that is near the middle of the plumbing so that water can be distributed to all batteries evenly.

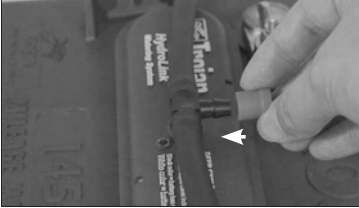


## HydroLink™ Installation (continued)

### **STEP 4**

#### **Install Red End Caps**

Place a red end cap on each of the remaining barb.



**Your HydroLink™ Watering System is now ready for use.**



## Watering

**IMPORTANT:** Water quality is important to maintain the life of your Trojan battery and HydroLink™ Watering System. Flooded/wet batteries need to be watered periodically. The frequency depends upon battery usage and operating temperatures. **Check new batteries every few weeks to determine the watering frequency for your application.** It is normal for batteries to need more watering as they age.

- **Fully charge the batteries prior to adding water.** Electrolyte levels drop during discharge and rise during charge. In addition, charging generates heat, fluid expansion and explosive gases.

**WARNING!** - Watering a battery before charge (or with a low charge level) can lead to boil over resulting in potential bodily injury and potential damage to the watering system, battery and vehicle.

- Tap water may be used if the levels of impurities are within acceptable limits. Refer to Trojan Battery's User Guide, Table 3 for Water Impurity Limits, available at [www.trojanbattery.com](http://www.trojanbattery.com).

## Operation

For continued successful operation of your HydroLink™ Watering System always:

1. **Use only an approved Flow-Rite water supply (visit [www.trojanbattery.com/HydroLink](http://www.trojanbattery.com/HydroLink) for a list of approved Flow-Rite water supplies).**

**IMPORTANT:** Use of unapproved water supply or modification of approved water supply can lead to system failure and will void your HydroLink™ warranty.

2. Always follow Trojan Battery's required battery watering procedures.
3. Perform regular scheduled maintenance.

**WARNING!** Only fill batteries after they have been fully charged, and require water. Watering a battery before charge (or with a low charge level) can lead to boil over resulting in potential bodily injury and potential damage to the watering system, battery and vehicle.

**IMPORTANT:** If you are using a Flow-Rite Hand Pump or Gravity Feed water supply to fill your HydroLink™ Watering System, please refer to Flow-Rite's instructions for proper operation!

## Regulated Hose and Deionizer Operation

### **STEP 1**

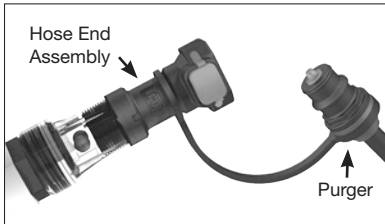
#### **Qualify Water Supply**

- 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 Flow-Rite water supply's instruction booklet.

For a Deionizer - Also verify that the water quality light indicates acceptable water quality. The light should be green in color.

**NOTE:** If light indicates unacceptable water quality, cartridge must be replaced.



### **STEP 2**

#### **Remove Dust Cover**



## Regulated Hose and Deionizer Operation (continued)

### **STEP 3**

#### **Mate Couplers**

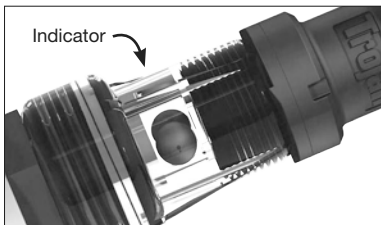
Insert the male coupler on the HydroLink™ Watering System into the female coupler on the end of the water supply.



### **STEP 4**

#### **Observe Flow Indicator**

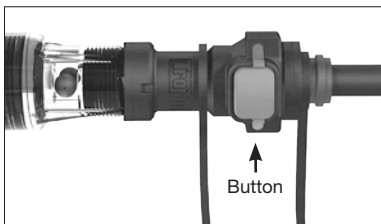
The red balls inside the flow indicator will begin to spin indicating that water is flowing into the battery. As the cells fill and the valves shut off, the balls will begin to spin slower until they come to a stop. This indicates that all valves have shut off and filling is complete.



### **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 under filled cells that will impact your battery's performance and long life.

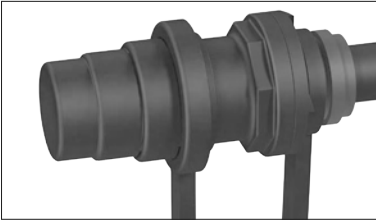


**WARNING!** If at any time during the filling process you have a valve failure disconnect immediately or too much water can be added to the cell causing the battery to overflow acid causing corrosion and potential injury.

**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.

## Initial Inspection

### Electrolyte Levels

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

## Regular Maintenance

Your HydroLink™ 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 and 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 instructions 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.

## 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 to the watering supply.

### Watering System

If you have vehicles that are taken out of service or put into storage for a period of 6 weeks or longer, your HydroLink™ Watering System will require seasonal maintenance. No special steps need to be taken for winterization for a HydroLink™ Watering System that is installed on the batteries; however, the following steps need to be followed when bringing your vehicle back into service:

1. After the batteries have been fully charged/equalized, check the HydroLink™ water level indicator on each battery and water if needed.
2. Return the vehicle to its regular service
3. Place the vehicle back into its regular watering schedule (waiting at least 1 week until next watering).

## Operating Specifications

### Operating Requirement of the HydroLink™ Watering System

|                 |                            |
|-----------------|----------------------------|
| Flow-Rate:      | 2-5 gallons per minute*    |
| Pressure Range: | 3-35 PSI (no flow, static) |
| Temp. Range:    | Freezing - 150°F/ 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 must be met for proper operation of your Trojan HydroLink™ Watering System. Contact Trojan Battery if you have any questions regarding HydroLink™ ([www.trojanbattery.com](http://www.trojanbattery.com)). If you have questions on Flow-Rite water supplies, contact Flow-Rite Control ([www.flow-rite.com](http://www.flow-rite.com)).

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

## HydroLink™ Warranty

### 4 Year Limited Warranty for HydroLink™ Watering System

Trojan Battery Company warrants only to the **original purchaser** that any HydroLink™ Watering System will be free of manufacturing defects in material and workmanship for four years after the date of purchase (the “Warranty Period”). Subject to the terms and conditions of this limited warranty, if the HydroLink™ Watering System fails to perform in according with this limited warranty during the Warranty Period, Trojan Battery will repair or replace the HydroLink™ Watering System, free of charge.

***Subject to the terms and conditions of this limited warranty, if the HydroLink™ Watering System is determined to be the cause of a Trojan battery failure (unable to deliver 50% of rated capacity) during the battery warranty period, Trojan will repair or replace the damaged Trojan battery and HydroLink™ Watering System, free of charge. Please contact the local Trojan Battery Distributor from whom you purchased the batteries to determine your Trojan battery warranty period. This HydroLink™ limited warranty does not extend your battery warranty.***

This HydroLink™ limited warranty is subject to the following terms, conditions and limitations:

- ✓ The HydroLink™ Watering System must be installed in compliance with Trojan’s HydroLink™ installation, operation and maintenance manual.

## HydroLink™ Warranty (continued)

- ✓ All recommended watering and maintenance procedures outlined in Trojan's HydroLink™ installation, operation and maintenance manual must be followed.
- ✓ The HydroLink™ Watering Systems must only be used on the following Trojan Battery products: T-605, T-105, T105-RE, T-125, T-145, T-860, T-875, T-890, T-1275 and J150.  
*HydroLink™ does not work with Trojan's Plus Series batteries.*
- ✓ An **approved water supply from Flow-Rite Controls** must be used (visit [www.trojanbattery.com/HydroLink](http://www.trojanbattery.com/HydroLink) for approved water delivery systems).
- ✓ The HydroLink™ Watering System must not be subject to misuse, abuse, inadequate maintenance or physical damage.
- ✓ The HydroLink™ Watering System cannot be subject to misuse, abuse, inadequate maintenance or physical damage.
- ✓ **This HydroLink™ limited warranty does not extend the battery warranty.**
- ✓ This HydroLink™ limited warranty applies to the original customer of the product and is **not transferable**.
- ✓ The HydroLink™ Watering System may not be transferred from one set of Trojan batteries to another set of Trojan batteries.

**To submit a claim, customers must send the following, at their own expense, to the local Trojan Battery distributor from whom they originally purchased the Trojan products:**

1. Copy of original proof of purchase for both the HydroLink™ Watering System and Trojan battery.
2. Date code for both the HydroLink™ Watering System and Trojan batteries.
3. Description of the problem (e.g., over filling, under filling).
4. All products which are the subject of any claim under this HydroLink™ limited warranty must be returned for inspection of proper installation, operation and maintenance procedures

### **Warranty Exclusions**

Trojan Battery Company will not be responsible for any expenses for transportation or travel, installation, loss of time, loss of use of equipment, or other expenses which would be considered as incidental or consequential damages.



For more information call 800-423-6569 or +1-562-236-3000  
[www.trojanbattery.com](http://www.trojanbattery.com)