Trojan®
BATTERY COMPANY

Single-Point **Watering Kit**
User's Guide

Contents

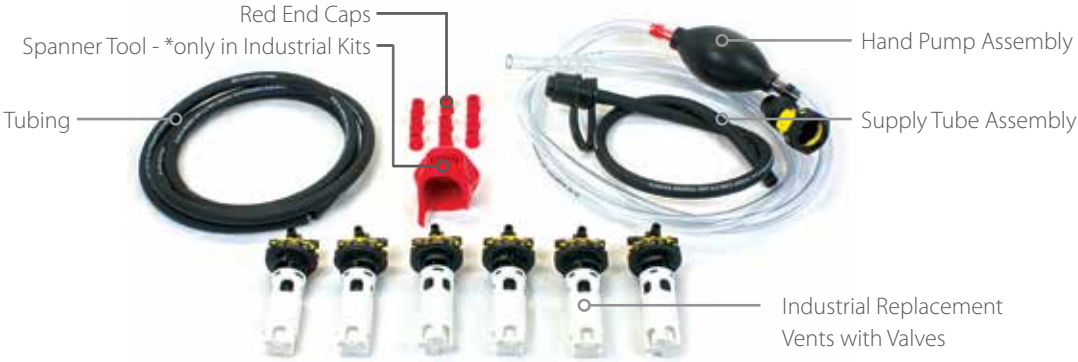
01 **Kit Contents** 3
02 **Safety Instructions and Warnings** 4
03 **General Information and Precautions** 4
04 **Before Installing your Single-Point Watering Kit** 5
05 **Single-Point Watering Kit Installation** 6
06 **Before Watering** 7
07 **Watering Procedure with Single-Point Watering Kit** 8
08 **Maintenance** 9

Single-Point Watering Kit (SPWK) User's Guide
Installation, Operation & Maintenance Manual

Thank you for choosing Trojan Battery products. This manual provides detailed instructions for safely installing, operating and maintaining the Single-Point Watering Kit. Thoroughly review this document before installing or using the Single-Point Watering Kit.

Kit Contents

Single-Point Watering Kit



Premium (including L16RE-2V) and Signature SPWK Contents

The Single-Point Watering Kit for the Premium and Signature line contains similar contents to those shown above with the exception of the Replacement Vents with Valves which will be yellow in color, and shorter in length, as shown in the image to the left. **In addition, the Premium and Signature Kits, do not include the Spanner Tool.**

01 Kit Contents

The Single-Point Watering Kit comes in three configurations: 12V, 24V and 48V. The kits are designed for single string installations with Trojan Industrial, Premium and Signature Line flooded batteries. For installations with multiple strings in parallel, simply order multiple kits at the required system voltage.

There are a total of nine different kits that are available for purchase. Three kits are designed for the Trojan Industrial Line, three kits are designed for the Trojan Premium / Signature line and three kits are designed for the Trojan Premium model L16RE-2V. The Industrial Line watering kit and the Premium and Signature Line watering kits use different sized vent caps.

Vent caps for the Industrial line will not work with the Premium and Signature line batteries and vice versa.

INDUSTRIAL LINE

INDUSTRIAL LINE SINGLE POINT WATERING KITS					
IND - 12V KIT CONTENTS		**IND - 24V KIT CONTENTS**		**IND - 48V KIT CONTENTS**	
DESCRIPTION	**QTY**	**DESCRIPTION**	**QTY**	**DESCRIPTION**	**QTY**
Industrial Vent with Valves - White	6	Industrial Vent with Valves - White	12	Industrial Vent with Valves - White	24
Supply Tube Assembly	1	Supply Tube Assembly	1	Supply Tube Assembly	1
Tubing (6 ft.)	1	Tubing (12 ft.)	1	Tubing (24 ft.)	1
Red End Cap, 9-Pack	1	Red End Cap, 9-Pack	2	Red End Cap, 9-Pack	4
Spanner Tool	1	Spanner Tool	1	Spanner Tool	1
Installation Instructions	1	Installation Instructions	1	Installation Instructions	1
Hand Pump Assembly	1	Hand Pump Assembly	1	Hand Pump Assembly	1

PREMIUM/SIGNATURE

PREMIUM & SIGNATURE LINE SINGLE POINT WATERING KITS					
PREM/SIG - 12V KIT CONTENTS		**PREM/SIG - 24V KIT CONTENTS**		**PREM/SIG - 48V KIT CONTENTS**	
DESCRIPTION	**QTY**	**DESCRIPTION**	**QTY**	**DESCRIPTION**	**QTY**
Prem/Sig Vents with Valves - Yellow	6	Prem/Sig Vents with Valves - Yellow	12	Prem/Sig Vents with Valves - Yellow	24
Tubing (3 ft.)	1	Tubing (3 ft.)	1	Tubing (7 ft.)	1
Supply Tube Assembly	1	Supply Tube Assembly	1	Supply Tube Assembly	1
Red End Cap, 9-Pack	1	Red End Cap, 9-Pack	2	Red End Cap, 9-Pack	4
Installation Instructions	1	Installation Instructions	1	Installation Instructions	1
Hand Pump Assembly	1	Hand Pump Assembly	1	Hand Pump Assembly	1

L16RE-2V

L16RE-2V SINGLE POINT WATERING KITS					
L16RE-2V - 12V KIT CONTENTS		**L16RE-2V - 24V KIT CONTENTS**		**L16RE-2V - 48V KIT CONTENTS**	
DESCRIPTION	**QTY**	**DESCRIPTION**	**QTY**	**DESCRIPTION**	**QTY**
Prem/Sig Vents with Valves - Yellow	18	Prem/Sig Vents with Valves - Yellow	36	Prem/Sig Vents with Valves - Yellow	72
Tubing (6 ft.)	1	Tubing (12 ft.)	1	Tubing (24 ft.)	1
Supply Tube Assembly	1	Supply Tube Assembly	2	Supply Tube Assembly	3
Red End Cap, 9-Pack	3	Red End Cap, 9-Pack	5	Red End Cap, 9-Pack	9
Installation Instructions	1	Installation Instructions	1	Installation Instructions	1
Hand Pump Assembly	1	Hand Pump Assembly	1	Hand Pump Assembly	1

The Single-Point Watering Kits shown are compatible with all Trojan Industrial, Premium, and Signature Line flooded batteries except models 24TMX, 27TMX, 27TMH and 30XHS.

02 Safety Instructions and Warnings

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

03 General Information and Precautions

General Safety Warnings

- Follow the procedures exactly as stated in these instructions, and heed all **DANGER** and **WARNING** statements, as well as those on battery, watering system and battery charger.
- Only trained technicians should service or repair the Single-Point Watering Kit. The instructions in this manual must be followed when installing, operating and maintaining the kit.
- **DO NOT** wear loose clothing when servicing any battery, watering system or battery charger.
- If wires are removed or replaced, make sure wiring and wire harnesses are properly routed and secured.
- Wear a full face shield and rubber gloves when working on or near batteries.

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 and service area.
- Ventilate when charging batteries 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.
- If acid comes in contact with skin, eyes, or clothes, follow these steps:
    1. External: Flush with water. Call a physician immediately.
    2. Internal: Drink large quantities of milk or water. Follow with milk of magnesia or vegetable oil. Call a physician immediately.
    3. Eyes: Flush with water for 15 minutes. Call a physician immediately.

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 watering system, battery or battery charger.
- Ensure that the work area is dry when servicing the watering system, battery or battery charger.

04 Before Installing your Single-Point Watering Kit

Remove the vent caps supplied with your Trojan batteries and inspect the fill wells.

Danger! – Poison/Acid

The battery contains acid, and may release explosive gases. Wear eye protection at all times. **DO NOT** smoke or have sparks or open flames near batteries. In the event of an acid spill, avoid contact with skin, eyes and clothing.

Check Electrolyte Level:

If electrolyte level is below the plates, manually add enough distilled water to cover the plates. Charge batteries to 100% full charge before using the Single-Point Watering Kit.

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

If electrolyte level is inside of the fill well, the cell is overfilled. **DO NOT** install the watering system at this time. Wait for the electrolyte levels to go down normally (through battery usage). After levels are normal, charge batteries to 100% full charge and continue with installation.

TECHNICAL SUPPORT
800-423-6569 Ext. 3045 or +1-562-236-3045

05 Single-Point Watering Kit Installation

Step 1: Clean Battery & Remove Vent Caps

Wipe down battery top and remove any loose debris. Remove the vent caps supplied with your Trojan batteries.

Step 2: Install Vent Caps with Valves

Insert replacement vent caps with valves supplied as part of your Single-Point Watering Kit by inserting and turning valve in a clockwise direction.

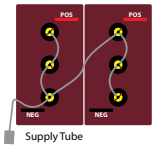
> **Industrial Line vent caps require the use of the Spanner Tool to completely tighten vent caps. The Spanner Tool is included in the Single-Point Water Kit for Industrial batteries.**
>
> **Premium and Signature line vent caps should be tightened by hand using the wings on each of the vent caps.**

Ensure the vent caps are completely sealed to avoid electrolyte spillage.

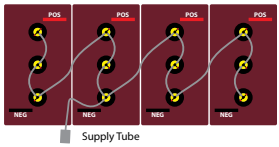
Warning! Press in the Single-Point Watering Kit vents with your hands only - **DO NOT** use a hammer.

Step 3: Determine Tube Routing

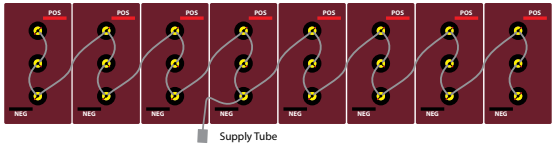
Choose the proper tube routing for your battery bank. In general, we recommend that the tubing follow the electrical path. Typical layouts of 12V, 24V, and 48V system configuration using 6V batteries are shown below.



12V example with
2 - IND17-6V batteries



24V example with
4 - IND17-6V batteries



48V example with 8 - IND17-6V batteries

Step 4: Cut and Install Tubing Segments

Cut tubing to size as needed and connect all the vents together by pushing one end of a tube segment onto one of the three barbs on each vent. Tubing should be pushed up fully to the stop. Repeat until all valves are connected.

Step 5: Measure, Cut and Connect the Black Supply Tube Assembly With Male Adapter and Dust Cover

Attach the black Supply Tube Assembly with Male Adapter and Dust Cover to one of the three barbs on a vent that is near the middle of the battery bank so that water can be distributed to all batteries evenly. Ensure that the location will allow the water supply to be connected without kinking the tubing. Once the location is identified, cut to the desired length and attach.

Warning! The Supply Tube Assembly With Male Adapter and Dust Cover must rest on the top of the battery bank. It cannot hang over the side or hang below the battery bank top.

Step 6: Slide the Dust Cover

Slide the Dust Cover over the Male Adapter end of the black Supply Tube Assembly.

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

Step 7: Install Red End Caps

Place a Red End Cap on each of the remaining unused barbs on each of the vents.

Your Single-Point Watering Kit is now ready for use.

06 Before Watering

Important: Water quality is important to maintain the life of your Trojan Battery and Single-Point Watering Kit. Flooded/wet batteries need to be watered periodically. The frequency depends upon battery usage and operating temperatures. Only use distilled water when watering your batteries. 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 connecting the Hand Pump Assembly With Female Adapter and Filtered Intake in preparation for adding distilled 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 and the battery.

07 Watering Procedure with Single-Point Watering Kit

Step 1: Filtered Intake

Insert the Filtered Intake end of the clear Hand Pump Assembly into a supply of distilled water.

Step 2: Prime Bulb

Prime the hand pump bulb by squeezing until filled with distilled water.

Step 3: Attach Hand Pump Assembly

Once the hand pump bulb is primed, remove the Dust Cover from the Male Adapter end of the Black Supply Tube Assembly. Attach the Female Adapter quick connect fitting of the Clear Hand Pump Assembly to the Male Adapter coupler end of the Black Supply Tube Assembly.

Step 4: Fill Battery Bank with Distilled Water

Squeeze the hand pump bulb with firm pressure to pump distilled water into the battery bank. **When the bulb becomes firm, all cells are full to the appropriate level.**

Step 5: Remove Hand Pump Assembly

Remove the Female Adapter quick connect fitting of the Clear Hand Pump Assembly from the Male Adapter coupler end of the Black Supply Tube Assembly by depressing the yellow push button on the Female Adapter coupler. If the water supply is left connected after the filling process is finished it could lead to overfilling of the battery bank. Place Dust Cover back on the Male Adapter coupler end of the Black Supply Tube Assembly.

Tip: If you slightly squeeze the Dust Cover when sliding it over the Female Adapter coupler it will create a vacuum allowing it to hold tightly.

Step 6: Initial Inspection of Electrolyte Levels

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

08 Maintenance

Your Single-Point Watering Kit requires regular preventative maintenance on a quarterly basis. Inspect the condition of all tubing connections and couplers to 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 installed properly.

For continued successful operation of your Single-Point Watering Kit, always use approved components.

Important: Use of an unapproved water supply or modification of an approved water supply can lead to system failure of your Single-Point Watering Kit. Only use distilled water.

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 damage to the watering system and battery bank.

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

TECHNICAL SUPPORT
800-423-6569 Ext. 3045 or +1-562-236-3045

NOTES

Trojan Battery Company, LLC

would like to thank you for making Trojan batteries your preferred choice. With over 85 years of experience, Trojan Battery is the world's most trusted name in deep-cycle battery technology backed by our outstanding technical support and service. We look forward to serving your battery needs.

TROJAN BATTERY COMPANY
12380 Clark Street, Santa Fe Springs, CA 90670 USA

800-423-6569 or **+1-562-236-3045**

or Visit www.trojanbattery.com

© 2014 Trojan Battery Company. All rights reserved.

This publication is protected by copyright and all rights are reserved. No part of it may be reproduced or transmitted by any means or in any form, without prior consent in writing from Trojan Battery Company.

Trojan Battery Company is not liable for direct, indirect, special, exemplary, incidental or consequential damages that may result from any information provided in or omitted from this manual, under any circumstances.

Trojan Battery Company reserves the right to make adjustments to this manual at any time, without notices or obligation.

Trojan Battery Company, the Trojan Battery Company logo, T2 Technology, Maxguard T2 Separator, Alpha Plus Paste, HydroLink, Plus Series, Polyon, TransPower, OverDrive AGM 31, Traveler, Ranger and Smart Carbon are either registered trademarks or trademarks of Trojan Battery Company.

Trojan batteries are available worldwide.
We offer outstanding technical support, provided by full-time application engineers.

call 800.423.6569 or + 1.562.236.3045 or visit www.trojanbattery.com

12380 Clark Street, Santa Fe Springs, CA 90670 • USA

© 2014 Trojan Battery Company. All rights reserved. Trojan Battery Company is not liable for damages that may result from any information provided in or omitted from this publication, under any circumstances. Trojan Battery Company reserves the right to make adjustments to this publication at any time, without notices or obligation.

990083

TRJN0202_SinglePointWateringKitUsersGuide_0714