

# PHILLIPS

## Qwik Tech Tips

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### FEATURED PRODUCT

#### STA-DRY® SLIM-7 Harness

- Incredibly strong seal
- Extraordinary corrosion protection
- Slim design allows for tight squeezes



### Electrical Terminology Explanation

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These next two tech tips are created to inform the reader about the basics of electricity. The demonstrations can be used to visually/theoretically understand what goes on inside the truck/trailer which will give you enough knowledge to perceive why the interior/exterior lights aren't working or how corrosion causes voltage drop and eventually to a failed system. To start this knowledge foundation, we are using an analogy, one that we can all relate to. For the example this month, we will use a trough (like the ones horses drink out of) and what can be done to the trough in ways that are similar to the electrical effects on truck and trailer wiring.

#### Voltage

Imagine a trough filled with water. Now imagine that there is a hole at the top of the trough and water has begun to pour out of the hole and onto the ground (similarly the electrons wanting to return to ground). Let's say the hole is 5" from the top of the trough, so the potential energy for the water to get to the ground is 5V.



Now imagine the hole is 12" from the top of the trough with a potential energy of 12V. The deeper the hole, the more pressure is exerted from the great amount of water.



The difference in height, causes a difference in the amount of water pressure escaping the hole, this pressure represents VOLTAGE. So, the higher the potential water pressure, the more force the water is able to exert and the more likely it is to flow through the hole to the ground.

What does this mean? The greater the voltage, the greater the possibility of electrons returning to ground.

#### Current

When considering the trough water analogy, focus on the area of the hole. If the hole is 1-inch in diameter and we measure the amount of water that is pouring for a given amount of time, we can calculate the amount of water leaving the trough in a given amount of time, known as CURRENT. The larger the hole, the greater the current being used, because more water is able to leave the trough faster with a bigger hole. Similarly the smaller the hole, the less current being used, because it would take a longer time for the water to leave the trough.

Next issue we will discuss Resistance and Power, and trailer requirements to make sure all electrical needs are met.



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TO BE ADDED TO OUR  
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PAST ISSUES

- Voltage is the unit of measure for electrical pressure (V)
- The higher the voltage, the more force/pressure the electricity has to flow
- Current is the rate of flow of electricity (A)
- Most people don't know that electricity flows on the surface of the wire, NOT on the inside!