

# REAL Torque

May 2021

Contact maintenance for any questions on 0800 80 80 69

## Electric Vehicles - Common Terms

**Electric vehicles have been around for a long time. Did you know that the first electric car was invented all the way back in 1828!**

However, it wasn't until 1896 that Thomas Parker built the first production electric car. It then took another 100 years for battery technology to improve to a point where these vehicles are now becoming more mainstream.

1895 Thomas Parker with his electric car (courtesy Wikipedia).



With the continued improvement in both batteries and technology, we see more and more electric cars and trucks on our roads. Along with the introduction of these vehicles comes some terminology you may or may not have heard before.

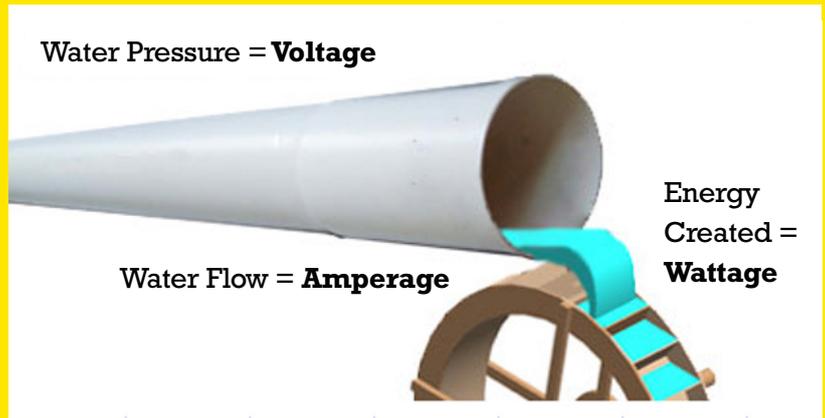
The purpose of this document is just to give you a basic understanding of what some of these terms mean.

# So, what is the difference between amps, volts, and watts?

If we think of electricity as water flowing through a pipe, it can help us understand amps, volts and watts.

- ▶ Amps would be the volume of water flowing through the pipe.
- ▶ The water pressure would be the voltage.
- ▶ Watts would be the power the water could provide (think back to the old days when water was used to power mills).

With this analogy in mind, the definitions below for amp, volt, and watt should be easier to understand.



## What are amps?

Electric current is measured in **amps**. A high current means lots of electrons flowing through the circuit. TR's electric rental trucks are capable of receiving up to 45 amps of current when charging. The water analogy (above) shows the amount of water flowing through a pipe in litres per minute.

## What are volts?

Voltage is a measure of the electrical 'pressure' required by the motor to move the vehicle. Think of a water pump supplying water to a house. The greater the pressure and the force which the pump exerts, the greater will be the flow of water through the pipe. The battery in TR's electric rental trucks generate 415 volts of electrical pressure.

## What are watts?

When talking about electric vehicles, a watt or wattage is simply measuring how much power is consumed by the electric motor to move the vehicle. TR's electric rental trucks are powered by a energy-efficient 150kW motor.

**Quick fact** - A kilowatt (kW) is 1,000 watts.



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## What are Kilowatt Hours (kWh)?

The battery capacity of an electric vehicle is referred to in kWh. Take our new SEA Electric rental trucks, for example, they have two batteries with a combined capacity of 136kWh. But, what does this actually mean? This means the total amount of electrical energy that can be stored in the battery for use by the truck is 136kWh.

Think of this as the diesel tank on our other vehicles. Instead of kWh, we refer to it as litres, generally around 200L on our smaller trucks.

The biggest difference is that the weight of the 136kWh battery, or any battery for that matter, does not change as the energy level drops. The weight of the batteries remain constant if the batteries are fully discharged or fully charged.

## Tips and Tricks

- ▶ Amps, volts, watts, and kilowatt hours are common electrical terms when referring to EVs.
- ▶ Amps refer to the amount of electrical energy capacity that can be delivered.
- ▶ Volts refer to the pressure or force of electrical energy.
- ▶ Watts is a measurement of what you can do with that energy.
- ▶ Kilowatt hour (kWh) is simply a measurement of how much stored energy is available in a battery.
- ▶ Did you know a that Nissan Leaf can store around 21kWh in its battery, yet our rental EVs hold 137kWh – that is just over 6.5x more energy.



TR Tips

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