



POWERTECH™

-What is a 'High Frequency Intellicharger™' and how does it save me money?

POWERTECH™ is a high frequency smart charger. POWERTECH™ assesses each battery's charging requirements through its patented intelligent technology. POWERTECH™ is designed to save you money on utilities, watering, and battery life.

Utility Savings

The PowerTech High Frequency Intellicharger™ saves you money on your utility bill through three important characteristics:

1. **Power Factor** – Probably the most important factor in saving you money is power factor. Power factor is, in effect, the percentage of the power being supplied by the utility ("Apparent Power") that can actually be used by your charger ("Active Power".) PowerTech operates with a power factor of approximately 100% due to its high frequency design.

o **High Frequency** – The PowerTech charger takes incoming AC, rectifies it, then inverts it into high frequency AC (16-33kHz). This isolation of the charger components from the AC line allows for power factors at or near unity.

o **Utility Costs** – Your utility costs are based on the "Apparent Power" that the utility sees you draw. A poor power factor inflates your bill by drawing unneeded power, it also inflates the demand portion of your bill by inflating apparent peak demand as well. Compare the power factor of the PowerTech with that of competing chargers and you will see how PowerTech can save significant amounts off your utility bill. (Tested SCR chargers show a power factor range from 56-76%.)

2. **Efficiency** – "Conversion Efficiency" is the rate at which the charger converts applied power into useable DC for the battery. Here again PowerTech's high frequency power supply operates at efficiencies of approximately 92% over the full charge cycle. (Tested SCR units showed a range of 80-84%.) The overall electrical efficiency of the recharge process is the product of the charger's conversion efficiency and its power factor.

3. **Overcharge** – Batteries require more than 100% of the removed power to be returned in order to be fully and evenly charged. PowerTech's patented intelligent software achieves full charge with less overcharge by using a pulsing "Electro-mix" to stir electrolyte and by accurately assessing battery condition in order to terminate without overcharge.

ADDITIONAL INTELLICHARGER™ BENEFITS AND SAVINGS

PowerTech offers you additional benefits and savings:

· **Universal Use** – PowerTech dynamically assesses each battery's charging requirements, which means that one PowerTech charger can recharge batteries from 450 to 1200 AH without adjustment - as long as they are the same voltage. So, you can recharge any 36-volt battery on any PowerTech 36-volt charger. Should your operation change trucks or move from standard to high-energy batteries, there is no need to purchase new chargers - your PowerTech charger will adjust automatically. And PowerTech can be set for standard flooded or cold storage batteries.

· **Water Consumption** – Because PowerTech recharges with less overcharge and therefore less heat, your batteries will consume less water – at least 25% – saving you the time and expense to water. For exceptional watering savings, match your PowerTech charger with HAWKER's WATER LESS® battery.

· **Battery Life** – Cooler temperatures mean longer battery life and fewer maintenance-related expenses with PowerTech.

POWERTECH™ is one of the Powerful (money-saving) Solutions from Hawker.



