

FLYBACK TECHNOLOGY

What is Flyback Energy Technology – What does it do?

Flyback Technology uses the magnetic field which is produced by an inductive device, such as an electric motor and then controls and directs that field in all of its rising, falling and static states. By taking energy from the electrical circuit, storing it in a magnetic field, and subsequently returning this energy to the circuit, efficiency is greatly increased. The capture of the flyback energy substantially reduces the heat that electrical motors generate and the Flyback Technology eliminates EMI (electromagnetic interference). EMI is a disturbance that affects an electrical circuit that may interfere with other electronic equipment. Eliminating EMI is important due to the international rules which all manufacturers must abide by when it comes to EMI.

The controller is designed to enable the input to be either AC or DC, allowing an AC motor to run with DC input without the use of inverters, which are highly inefficient when running at the minimal power levels required of our AWG machines to produce water. Flyback Technology does not convert DC to AC but changes DC to a non-sinusoidal, periodic waveform that can be used to power AC devices, such as motors. Using Flyback Technology greatly reduces the number of photo voltaic (solar) cells and batteries needed to run AWG machines. Most significant is when using Wind or Solar power as a power source, in combination with the Flyback Technology, NO inverters are needed. This is a first in electrical power generation systems. The elimination of the power loss associated with current inverter technology – which can be 25% to 30% – results in a substantial savings of power, cost and increase in efficiency.

When using off-grid power sources such as Wind or Solar power with Flyback Technology – **98% of the energy generated will be delivered to the end source** (motor-power, etc.). This could reduce the number of Solar panels by 25% while still producing the same amount of power to the end user or system, power that is cleaner, emitting less heat and with no EMI. Flyback is a breakthrough technology that will not only revolutionize our AWG machines, but power consumption worldwide and greatly reduce the Carbon Footprint associated with fossil fuel power generation.

With Flyback Technology it has been said, “It will never work.” The technology has been long in coming, however after 15 years an American company has proven that it works. The capturing of Flyback energy will increase the efficiency of any electric induction motor. The use of Flyback Technology reduces heat, eliminates EMI and will prolong the life of the motor. Flyback Technology will save significant amounts of energy worldwide.

Flyback Energy and AWG International have negotiated a Memorandum of Understanding (MOU) which offers AWGI exclusive rights to the use of Flyback Technology in all AWG atmospheric water applications. This is significant for AWGI as it allows AWGI to build Air-to-Water Systems that produce fresh water for drinking and medical uses while unplugged...completely off the electrical Grid...very, very efficiently. This will allow AWGI Air-to-Water systems to be dropped into major disaster areas, hooked up to the Solar Panels or Wind Turbines and batteries allowing water to be made instantly. A speedy and immediate response is gained.

Over the past several months Flyback Technologies has been testing AWGI 2nd Generation Air-to-Water units. They have shown an increase in efficiency of over 10% while running on regular house current. Testing and fine tuning of the interface will continue. Also, with the Flyback Technology they have been able to use less energy when running an AWGI 2nd Generation Air-to-Water unit on DC power without an inverter. On a commercial AWGI AquaMaX system producing 1,000s of gallons of water a day a 10% to 15% increase in efficiency and cost savings would make a significant dent in power consumption and the associated costs. Flyback Technology will decrease the Carbon Footprint of many commercial and industrial applications. When using Flyback Technology in any Wind or Solar power generation application, the increase in efficiency will be substantially greater, saving energy and reducing costs.

The combination of Flyback Technology and AWGI Air-to-Water systems puts AWGI far out in front of any competitor. With Flyback Technology and the incorporation of other new cutting edge technologies into our new G3 units (projected to be available Spring 2011), we will have systems that will increase the production of fresh pure water by several times, have greater energy efficiency and be quieter than your refrigerator.

An area of great interest and focus is the use of AWGI Air-to-Water systems combined with the Flyback Technology for *Controlled Environmental Farming* practices or Hydroponics, farming without soil. Any Green House, roof top, backyard or field can now be used to grow fresh organic produce. Growing produce at the point of use dramatically reduces food spoilage as well as the Carbon Footprint and costs associated with transportation and distribution. Hydroponic food growing systems use no soil, however must have very pure water to enable the plant roots to absorb nutrients. AWG fresh water is 99.5% surgical pure and contains no ground water pollutants, including chemical or biological contaminants.

Hydroponic systems are not affected by drought, insects, hail, floods etc., and as a result produce a much higher yield while using up to 50 times less water. These systems can be placed turn-key almost anywhere fresh produce is needed. When using AWG Air-to-Water generation systems, the excess pure water can be bottled and sold to recover set up expenses of the Hydroponic system. Setting up a fresh water source close to a population area eliminates the time and energy most of the world uses searching for drinking water daily, which is estimated to be 30% of their daily caloric output.

In addition, we have determined that by combining AWGI Air-to-Water systems and a number of proprietary in-licensed technologies will enable many factories around the world to use AWGI systems to provide dehumidification, air conditioning and air purification, with the added bonus of offering bottled water to the workers to take home. Installing these systems into factory and office buildings will help to reduce chronic absenteeism due to heat and poor ventilation systems that circulate bacteria, fungus and other causes of airborne respiratory illnesses. With a cleaner work environment and pure water every day, employees will be healthier and more productive at their jobs and in their community.

Water for the World