



## Decreasing Industrial Imprints on Our Environment, One Actuation at a Time

Sarasota, Florida – Viking AT, LLC, creators of ViVa Technology, discuss the impact that piezo technology will bring to manufacturing and next generation products that will result in drastic improvements to the environmental footprint.

Everyone wants to get the most out of their manufacturing process and product capabilities. With Viking AT's ViVa® Piezo Technology solutions you get **MORE** power, **FASTER** speeds, **BETTER** precision and control, and **GREATER** reliability. Even better, it's done with a 95% reduction in power, providing **ULTRA LOW** power consumption and making it the latest in cutting-edge green technology.



Viking's CEO Jeff Moler talks about one area that seems to be the most obvious and greatest "Green Power" replacement in terms of piezo technology: ***the replacement of solenoids with piezo actuators.***

A solenoid is a copper coil wound tightly into a packed shape around a metal core that converts electrical energy into magnetic flux, and finally mechanical motion. When the solenoid receives an electric current, it creates a magnetic field that has been used in controlling locks, fluidic valves, water pressure, air pressure, clamps, and such. Unfortunately, most of the energy fed into these things is wasted and turned into heat. This is old technology that would be the equivalent to 8 track tapes in today's MP4 world.



### Solenoid Problems:



**Solenoids contain lots of costly copper**, pulling from our natural resources and leaving huge gaping holes the size of many football fields which are eventually abandoned and left as toxic soil. Have you seen the recent arsenic flow reported on May 30, 2014 from the [Kennecott Copper Mine near West Jordan subdivision](#) ?



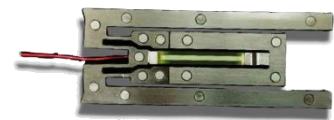
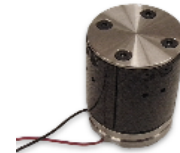
**When mining for copper you create radionuclides in waste rock** which enhances the naturally occurring radioactive materials like uranium, thorium, and radium and release other toxins in large volumes of waste that eventually pollute our water and communities surrounding the mines.

- **Solenoids consume lots of power** (which means even more copper needed to run wires to power these dinosaurs) and only turn 5% of its current flow into power. The remaining 95% turns into heat.
- **Solenoids are extremely limited** and tend to be off or on, open or close, stop and start. They can be pulsed quickly to get partial movement but at that rate, power consumption is even worse.
- **Solenoids are slow, bulky, very limited and unable to keep up with modern advancements in technology all at a greater expense.**



## Viking Piezo Actuator Solutions: **ViVa**

- **Viva Piezo Actuators, provide many options with extreme accuracy** by using controlled electrical charge for precise movement. For example, an actuator receives a signal, and it will react based on the strength of the signal as well as the duration of the signal, and will act in a smooth and precise manner.
- **Viva Piezo Actuators consume 95% + less power**, meaning it uses less energy to power, and also much less copper to get power it. Wire size to handle 0.020 watts as compared to 3 watts.
- **Viva Piezo Actuators are 100x's faster than a solenoid, 1,000x's more controllable, and performs without the friction or temperature you get with a solenoid.**
- **Viva Piezo Actuators are extraordinarily reliable and long lasting** - with customer reports of 3 billion cycles and still going strong.
- **Viva allows for dynamic designing and cutting technologies.**
- **Viva Piezo Actuators can be used in energy harvesting.**



**Viking AT's ViVa Piezo Actuator Technology makes the products that make products greener.** They also allow for innovative designs and solutions that solenoids cannot provide. As piezo knowledge increases in harnessing its power and mastering operational control through design, more and more, the design community is realizing its potential to push past lighters, loudspeakers, and simple devices.

**Viking AT Piezo Actuators are unique** in that our ViVa® Piezo Technology has taken the traditional piezo effect, both direct (generator or sensor effect converting mechanical energy into electrical energy) and inverse (converts electrical energy into mechanical energy) to greater heights and deeper depths in the control and harnessing of this energy, pushing the boundaries beyond what was believed to be possible. For example, excess mechanical vibration from engines, motors, shock absorbers can be converted to electrical energy and used where needed instead of wasted.



*For more information on ViVa Piezo Technology and how it can help you go greener, please go to [www.vikingat.com](http://www.vikingat.com) or call 941-924-0900 and a Viking Piezo Extreme Team members will be happy to answer any questions that you may have.*