

CavGenX Introduces Heat Pump Turboshaft for AI Processor Cooling and Hydraulic Power Generation

CavGenX Introduces a Heat Pump Turbine for Thermal Cooling and Hydraulic Power Generation using Solar Thermal, Processor Waste Heat, and Conventional Fuels.

MADISON, WISCONSIN, USA,
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EINPresswire.com/ -- [CavGenX](#), a subsidiary of [Infinity Turbine](#), is proud to announce the launch of its advanced heat pump turbine, designed to transform the world of energy generation and hydraulic power. The CavGenX turbine is set to provide closed loop cooling for AI processors and hydraulic pressure that can be harnessed for a wide range of applications, including driving wheels, gears, machinery, and even lifting devices such as drones.



What sets the CavGenX turbine apart is its unique compressor, which combines a cavitation device and magnetic induction device on a common shaft, creating a true turboshaft engine. This closed-loop system utilizes an environmentally friendly working fluid, such as closed-loop CO₂, to power an Organic Rankine Cycle. This process involves taking a liquid through phase changes to generate thermal processing, and hydraulic pressure. As a byproduct of the cycle, it also produces cooling.

One of the most innovative aspects of the CavGenX turbine is its ability to utilize heat from various sources, including solar, electric, biomass, conventional legacy fuels, and waste heat. This means that it can effectively harness heat energy to produce mechanical power, offering a sustainable solution to power generation.

In true a Organic Rankine Cycle, this closed-loop process takes a liquid through phase changes to generate heating, cooling, and hydraulic pressure. Liquid is spun into vapor, pressurized by heating, then evaporated and condensed back to liquid to repeat the process. Cooling is the byproduct of the cycle.

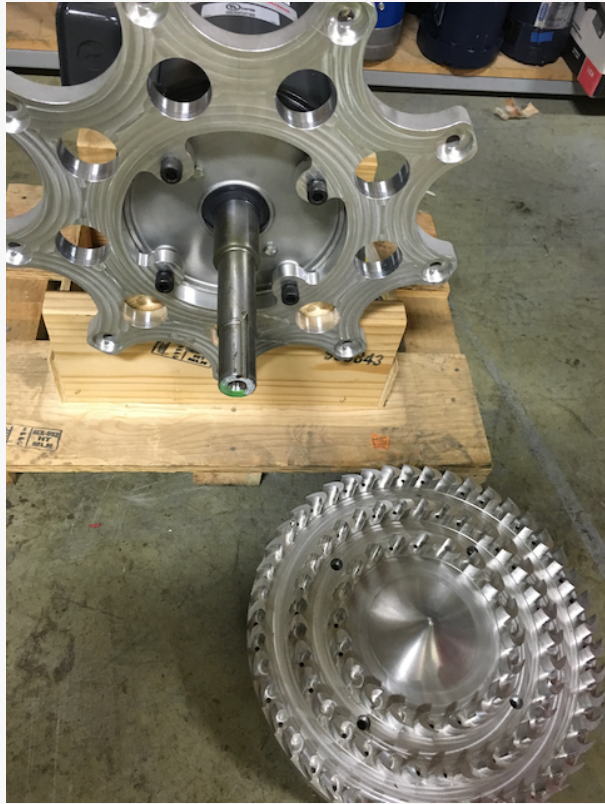
Using heat to make mechanical power is nothing new. The first steam engine used this principle. But this device takes the concept to a new level by allowing solar thermal or waste heat to derive mechanical power to drive hydraulic devices.

The CavGenX turbine boasts a single moving part, enabling it to be miniaturized to fit under the hood of a Tesla, yet scalable to generate enough hydraulic flow to power heavy machinery like CAT earthmovers. In typical applications, large engines are used to drive hydraulic pumps, but the CavGenX turboshaft engine efficiently converts heat into pressure, eliminating the need for a separate hydraulic pump.

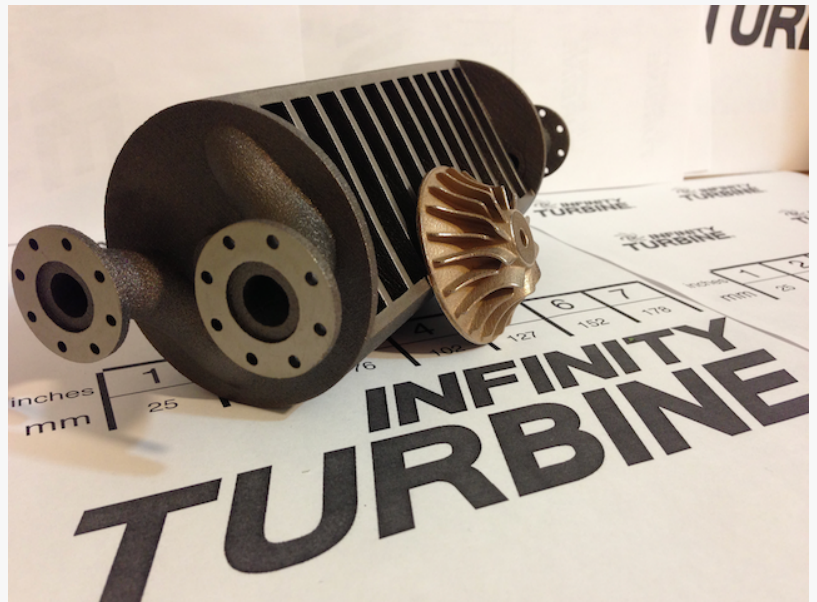
Furthermore, the heat pump features of the CavGenX turbine open up exciting possibilities for residential and commercial heating and cooling

systems. With minimal moving parts, it is also well-suited for use in AI GPU farms and data processing centers, which often rely on energy-intensive evaporative cooling methods. These data centers use huge amounts of evaporative cooling, typically done with water. Up to .5 liter of water may be used for 50 Chat GPT queries, according to a recent UCR university study.

In addition to these applications, the CavGenX turbine has the potential to transform



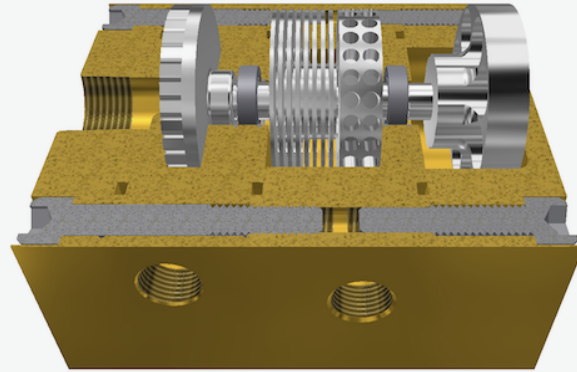
Infinity Turbine Radial Outflow Turbine



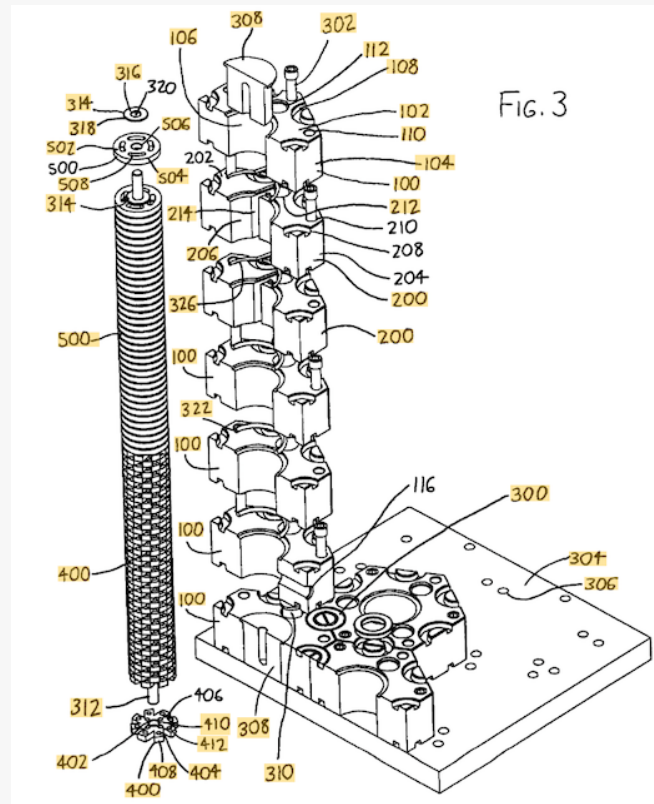
Infinity Turbine 3D Printed Heat Exchanger and Turbine

desalination processes. It can provide the pumping power needed for Reverse Osmosis (RO) units, either through an accessory pump integrated into the shaft turbine or by using hydraulic pressure to replace electrically driven RO pumps. Considering that high-pressure pumps consume a significant portion of the energy in desalination plants, the CavGenX turbine promises substantial energy savings. High pressure pumps consume 60-80 percent of the energy in a desalination plant, which takes around 3 kWh to make a cubic meter of fresh water from saltwater.

CavGenX is a subsidiary of Infinity Turbine, a company with a rich history in ORC turbine design and thermal processor development since 2008, along with extensive experience in CO2-based technologies since 2004. The [Modular Fluid Handling Device](#), an active patent (US7726331B1), enables the stacking of gas and liquid processing blocks like building blocks to create a turboshaft heat pump cycle. This innovative design allows for the easy addition or modification of stages and functions by simply unbolting a block.



Infinity Turbine CavGenX Cavitator Compressor Turbine



Infinity Turbine Patent US7726331B1

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