

The Fenton Turbine



FeTu was established in 2016

An Innovation Driven Enterprise that has created a revolutionary 'green' energy device targeting carbon reduction across a broad range of systems and industries.

FeTu offers a disruptive, enabling technology; a versatile, cost effective, highly efficient, fluid displacement system for a broad variety of applications.

FeTu welcome Commercial, Technology and Investment interest.

FeTu Limited

The Wharf,
Gas Works Lane,
Elland,
West Yorkshire,
HX5 9HH

info@fetu.co.uk

01422 753 133



Our IP portfolio has continued to broaden the development of our core architecture.



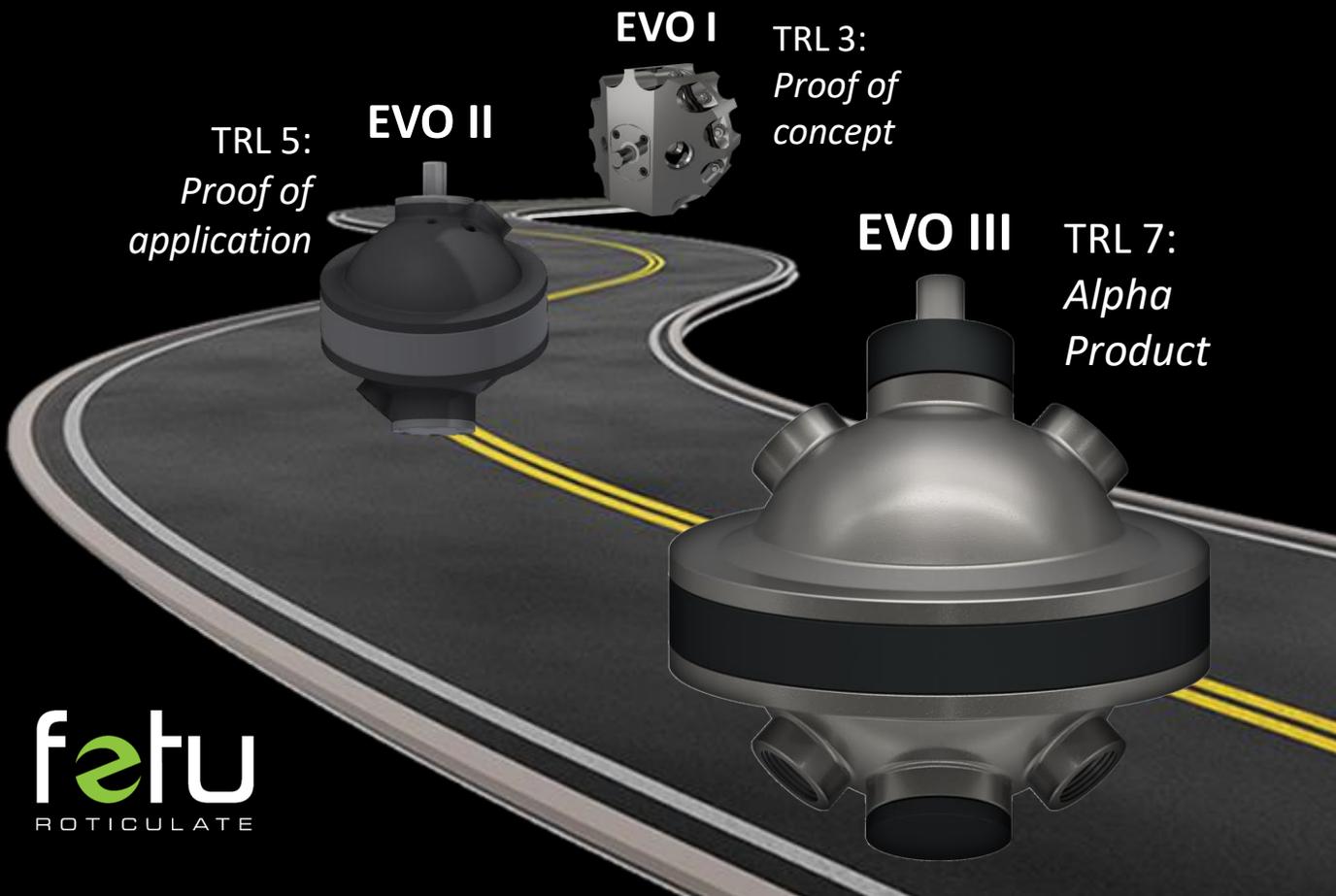
Patents granted in the 'Global top 20' manufacturing countries



FeTu are in possession of significant IP Insurance



Patents, Trade Secrets, Trademarks & Copyright protected.



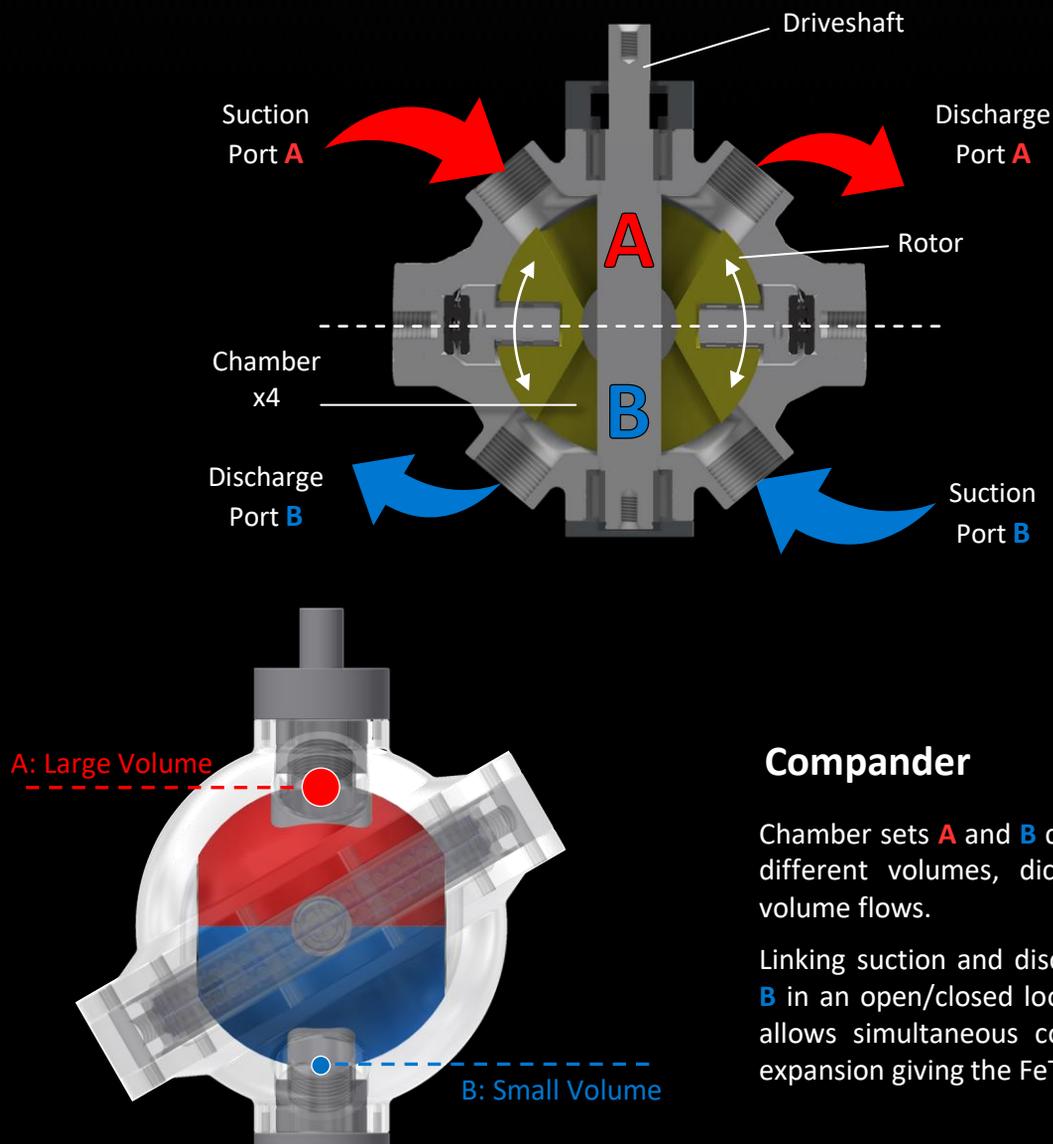
Operation

The **FeTu** device uses shaft rotation to control a single spherical rotor which rotates and articulates (Roticulate™) in 3D space, enabling precise & simultaneous management of four volumetric chambers with a single set of mechanical constraints.

Translating energy seamlessly and continuously between rotational and volumetric sources, FeTu has applications in compressing, expanding, pumping, cooling/heating, power generation, and thermal propulsion.

Roticulation™ is perceived as the world's first 'quad-acting' (duplex double-acting) device that can outperform technically complex machines which utilise many hundreds of parts yet itself has only two moving parts, consisting of:

- **Drive-shaft** - which delivers or extracts shaft power from the rotating internals.
- **Rotor** - The rotor predictively Roticulates™ so that the two pairs of anti-phase chambers systematically expand and collapse, provisioning absolute chamber evacuation.



Compander

Chamber sets **A** and **B** can be built with different volumes, dictating different volume flows.

Linking suction and discharge of **A** and **B** in an open/closed loop configuration allows simultaneous compression and expansion giving the FeTu 'Compander'.

Applications

1 machine, 3 variants, 6 applications

1



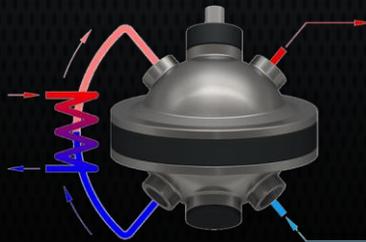
Gas Compressor

- Highly efficient, tested compressor technology
- Air and R-134a tested

Vacuum & Pump

- Successful vacuum tests
- ORC pump study completed

2



Power > Heat

- Refrigeration & Air-Con
- Air Source heat & cool pump
- Space Heating

Heat > Power

- Two stage gas turbine
- Power generation from liquid fuel
- Propulsion & portable power

3



Power > Heat

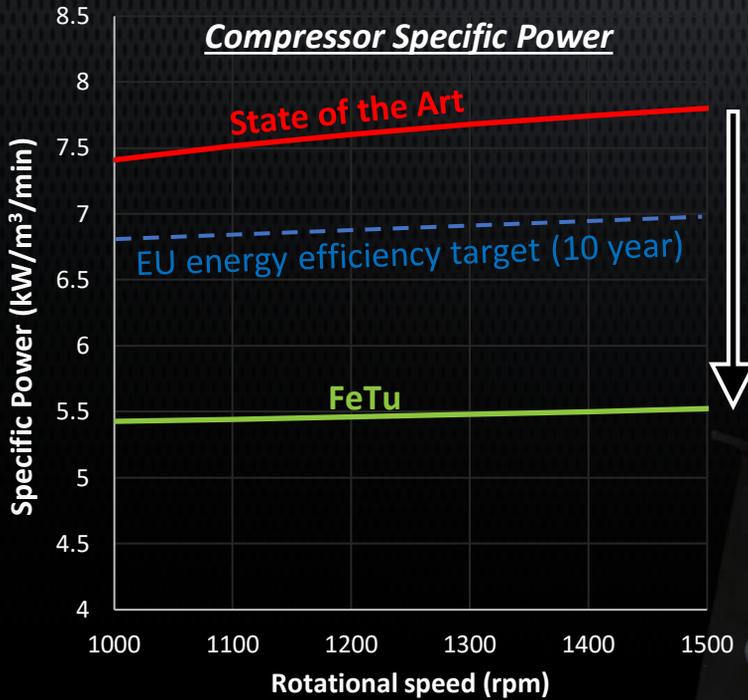
- Refrigeration & Air-Con
- Two stage closed cycle turbine
- Space Heating

Heat > Power

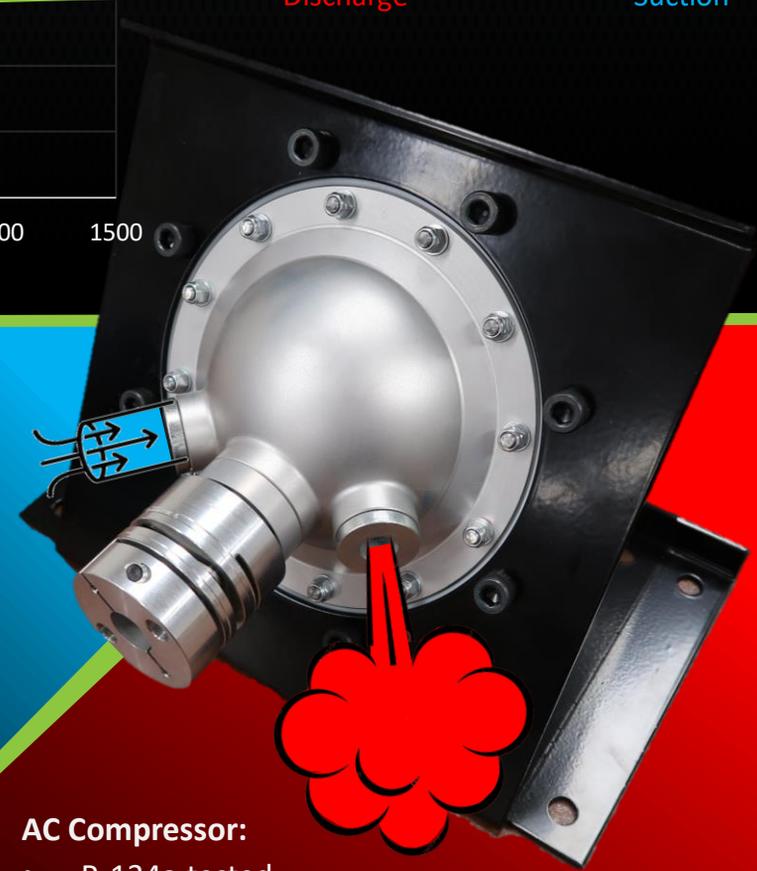
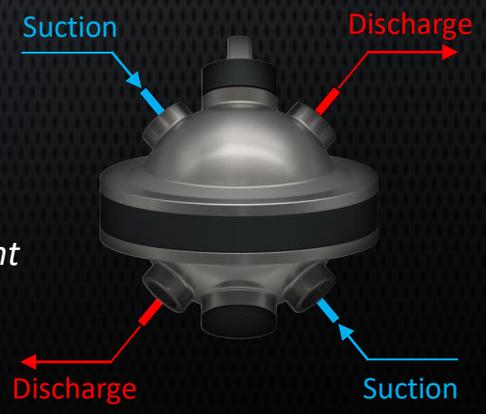
- Waste heat to Power
- Green Power Generation from Low Grade Waste Heat
- Geothermal & Solar



FeTu Compressor & Vacuum Pump



+25%
more
efficient



Vacuum tests:

- 0.5 bara @ 300rpm (Oil Free)
- 0.5 bara @ 50rpm (Oil Flood)

ORC Pump:

- R1233zd tested
- Highly efficient at low speeds

AC Compressor:

- R-134a tested
- Highly efficient at low speeds

Compressor test – Oil Free (0-1500rpm):

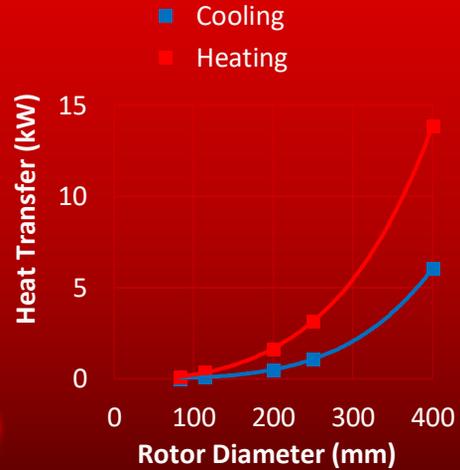
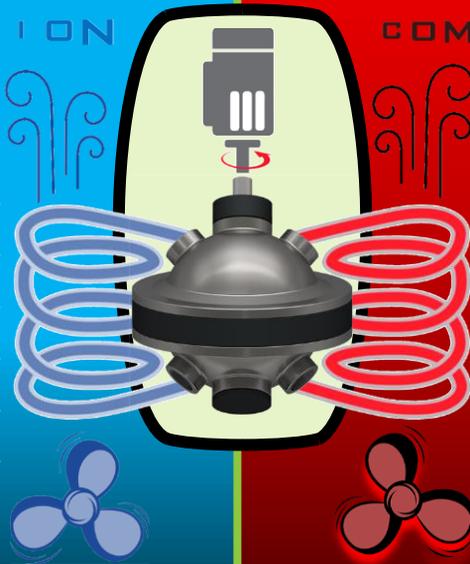
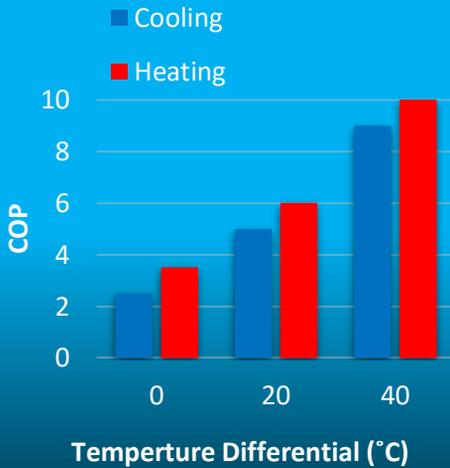
- +90% Isentropic Efficiency (Low temperature)
- +90% Volumetric Efficiency
- Pressure (static head) 7:1 PR @ 1000rpm
- 5.4kW/m³ (25% more efficient)

Recuperative Refrigeration & Heating

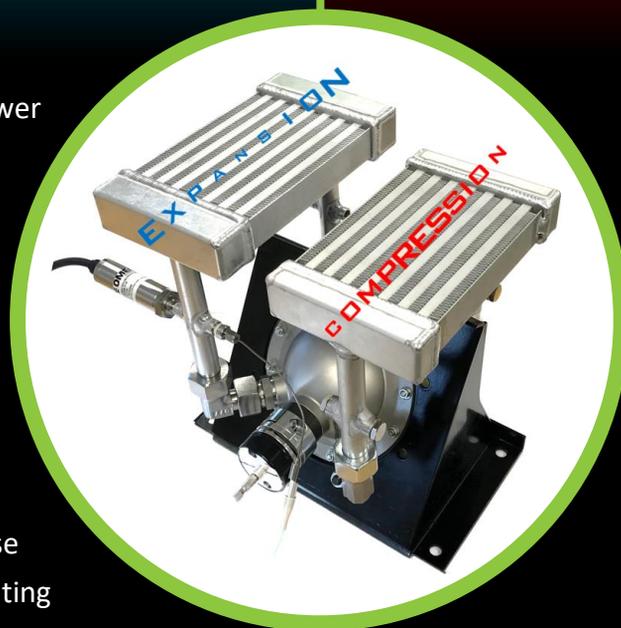
A **COOL** way to manage **HEAT**

EXPANSION

COMPRESSION

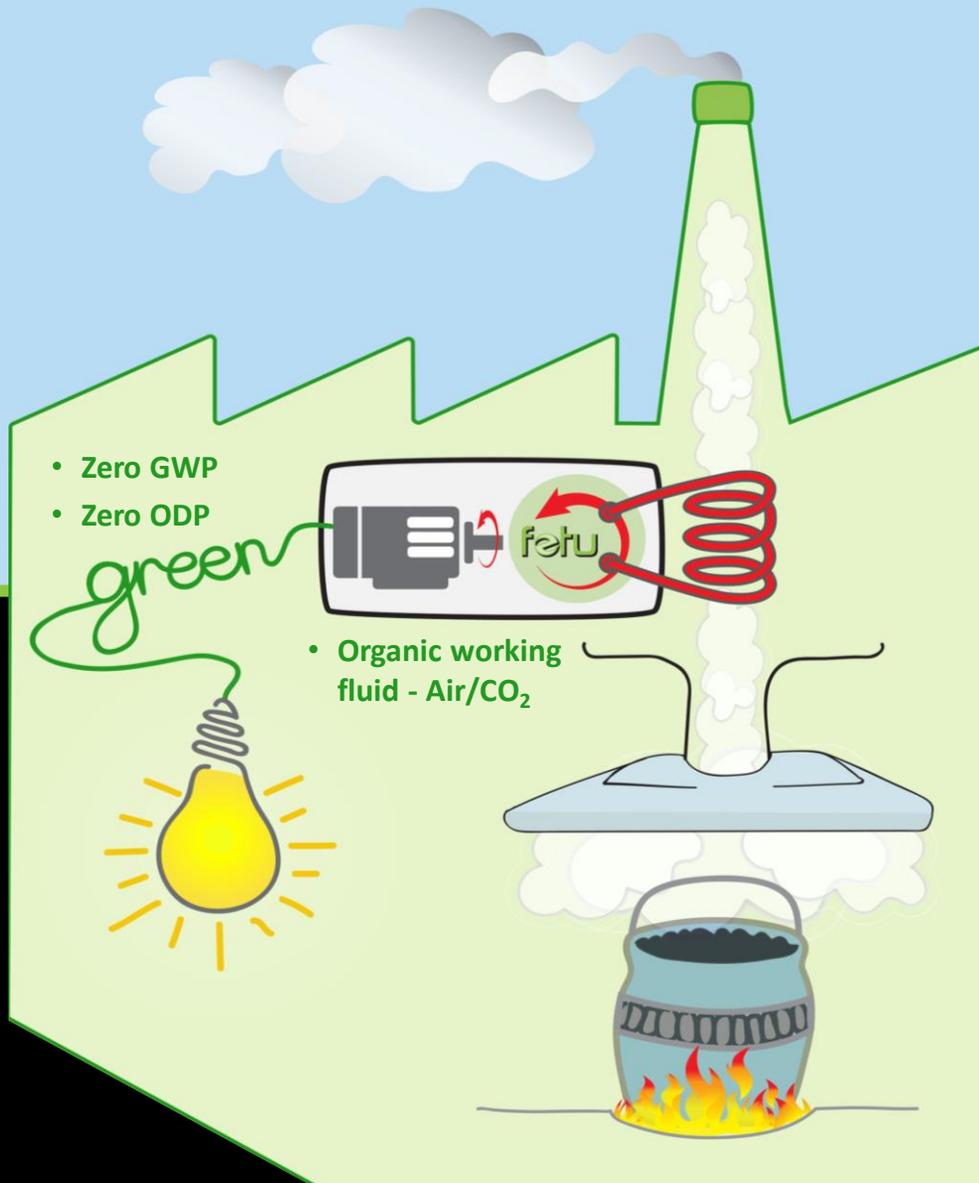


- Open/Closed Loop Power to Heat
- Compact, Scalable, Lightweight
- Two-Stage 'Componder'
- Remote Heat Exchange Continuous Flow
- Low Start up Torque
- Ability to pre-pressurise
- Analogue Cooling/Heating



- High Return on Investment
- Commercial paid trial in progress
- Organic Fluids (air, CO₂)
- Zero ODP & Zero GWP

Regenerative Heat Engine



- Open/Closed Loop Heat to Power
- Compact, Scalable, Lightweight
- Two-Stage Compressor
- Remote Heat Exchange
- Ability to pre-pressurise
- High Return on Investment