



# Calnetix FreeSpin In-line Turboexpander™

The Pressure-to-Power Solution



*Innovation That Drives Industries™*



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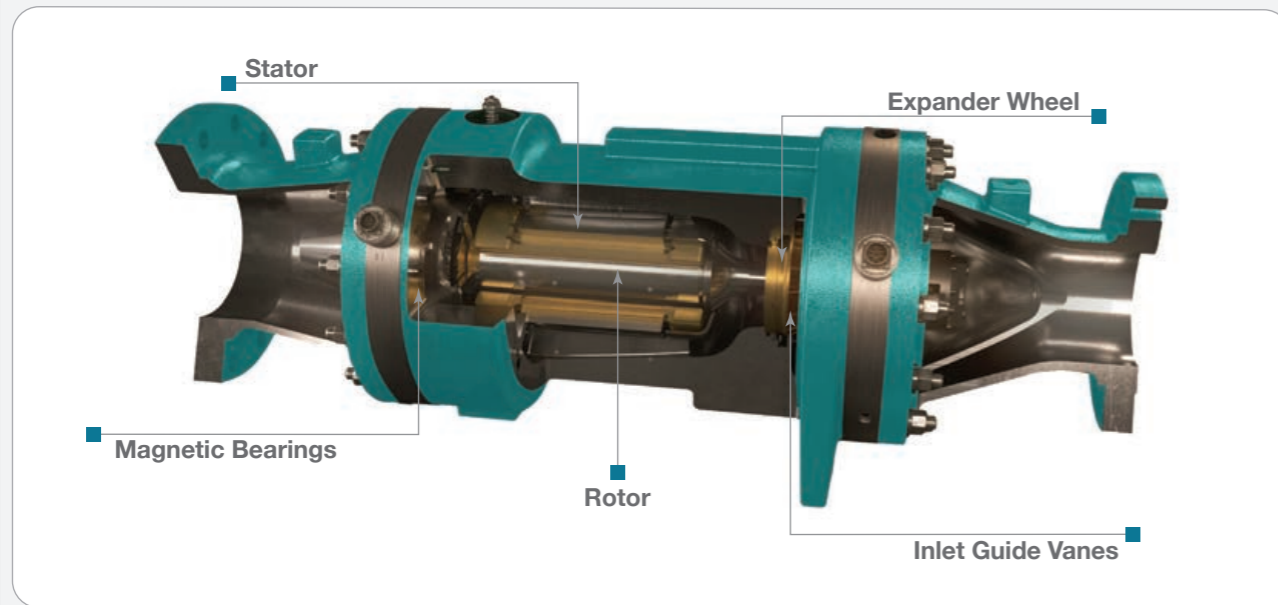
## FreeSpin In-line Turboexpander™

An oil-free, hermetically sealed solution for reducing pressure in gas processing and distribution systems while generating clean power.

The Calnetix FreeSpin In-line Turboexpander™ (FIT) provides a way to capture the energy wasted in pressure reduction. Turboexpander systems with Calnetix's Magnaforce™ motor generators extract kinetic energy from the pressure reduction at the various stages of gas processing and distribution and allow for the generation of electricity with no added pollution.

The FreeSpin In-line Turboexpander system consists of an integrated high-speed turbine and high-efficiency generator that runs on magnetic bearings in a hermetically sealed, lubrication-free unit, and provides more reliable performance. Its high-speed Magnaforce™ motor generator has variable speed and load capabilities and provides greater power density in a smaller footprint than conventional systems.

Cutaway model of the FreeSpin In-line Turboexpander™

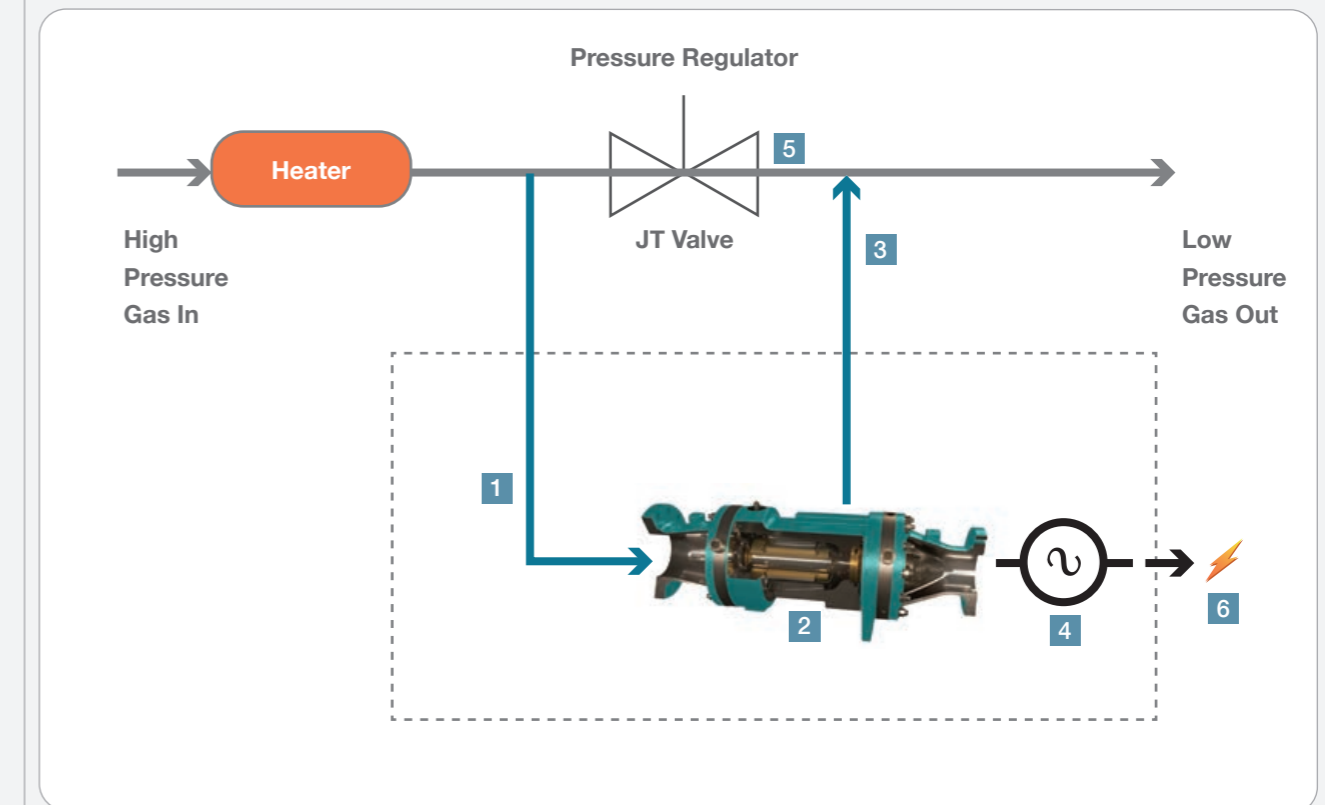


For more than a decade, Calnetix Technologies has been at the forefront of turboexpander technology, designing, implementing and manufacturing some of the most innovative solutions for expanders across many industries. Calnetix was the first to bring a self-contained, fully integrated expander solution for industrial waste heat recovery to market and subsequently licensed the technology to GE and other OEMs.

## How FreeSpin In-line Turboexpanders™ Work

- 1 The pre-heated high-pressure gas flows into the turboexpander.
- 2 The gas expands through the radial turbine wheel.
- 3 The low-pressure gas exits the FIT and is ready for delivery to residential and commercial users.
- 4 The energy wasted during the pressure reduction process is recovered by the FIT and converted to electrical power.
- 5 Any excess high-pressure gas not directed through the FIT is expanded by the conventional pressure regulator.
- 6 The produced electricity enters the Vericycle™ Bi-directional Power Electronics Unit, which can be programmed to specific power requirements.

Calnetix's FreeSpin In-line Turboexpander™ System





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