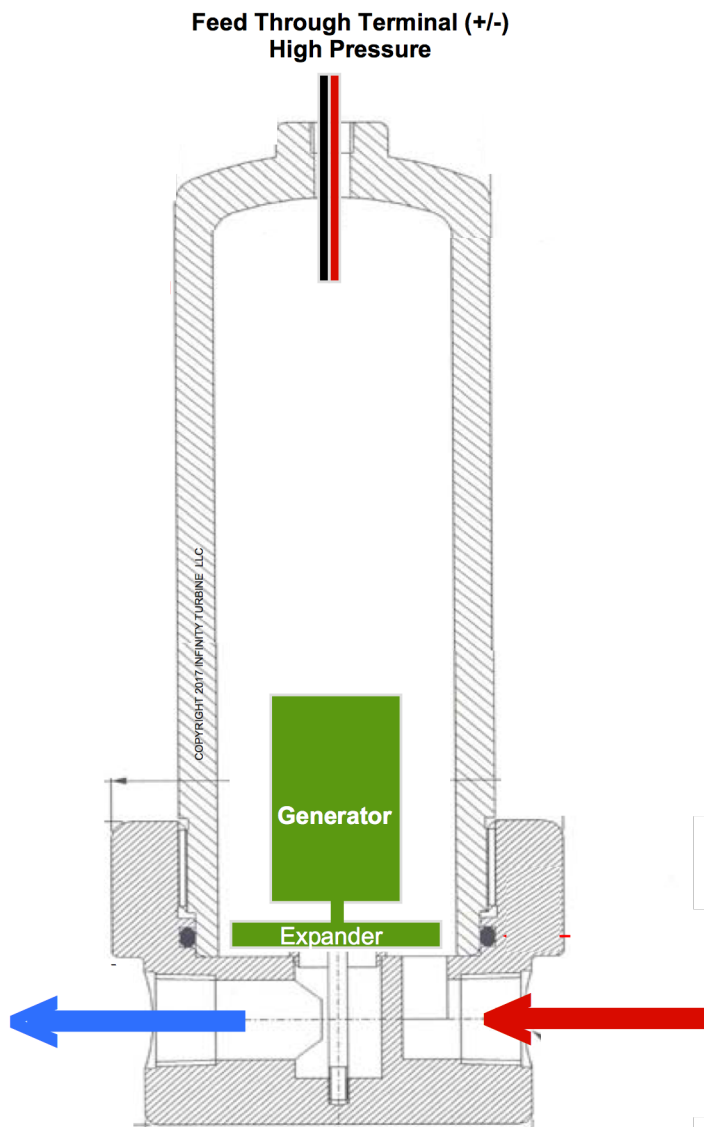


CO2 Concept Turbine Generator Using High Pressure Filter of 3 Inch Diameter

Stainless Steel Filter Assembly 3,000 psi (or greater) Mounted Upside Down



The high pressure stainless steel filter (3,000+ psi) is turned upside down (so that any liquid drains down). The filter element is removed from the bowl. Pressurized CO2 enters from the side, is expanded through the turbine, and exits from the housing. The rotary expander is mounted directly to a brushless motor/generator (RC motor), which is supported by Delrin/aluminum framework which fits into the bowl (and easily removed). The leads are attached to a high pressure feed-through terminal at the bowl 1/4 inch NPT fitting area. During development, the unit is tested with compressed air, and then CO2. If freezing occurs, a band heater can be attached to the bowl. If freezing from the expanding flow is an issue, magnets can be placed (stationary) around the perimeter of the rotor, producing Eddy current (inductive heat). This point of use expander can be used in waste heat applications (as low as 30C), or with any pressurized flow within the limits of the pressurized filter housing and motor/generator insulation.