LINEAR POWER LTD.

ULTRA-LOW TEMPERATURE POWER CYCLE ENGINE

A New Approach to Getting More Power from a Heat Source – Creating a Higher Carnot Thermal Efficiency

The Carnot Thermal Efficiency is Solely Determined by the Temperature Difference Between the High-Temperature Heat Reservoir and the Temperature of the Low-Temperature Heat Reservoir used for Heat Rejection – the Delta Temperature.

How can the Temperatures of the Power Cycle be Enhanced in order to get a Higher Temperature as an Enhanced Heat Source and a Lower Temperature for Heat Rejection for an Ultra-Low Temperature Resource in Ranges Below 125 deg F. (51.7 deg. C)?

And, What is the Best Method to get the Most Power from the Amount of Thermal Energy Available (Your Heat Source)?

The Answer to Question Number One

Adiabatic Compression, Heat Removal (to the Power Cycle) and Expansion of Moist air in order to Create a Closed-Loop Evaporative Cooling (for Heat Rejection) and Condensation Heating Process that Results in Enhanced Temperatures for the Power Cycle thereby Producing a Higher Carnot Thermal Efficiency for the Power Cycle, increasing the high temperature and reducing the low temperature.

The Answer to Question Number Two

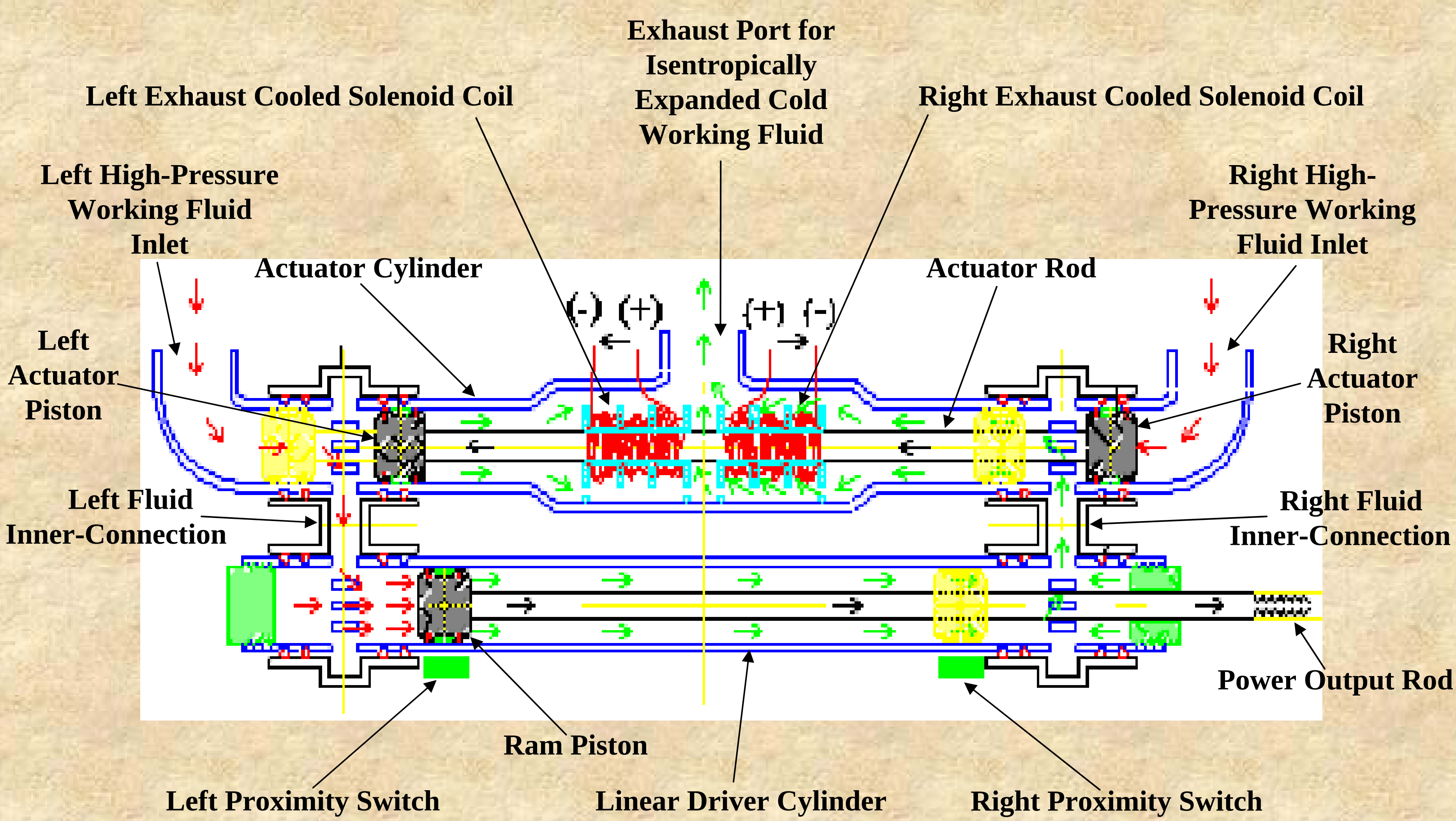
Operate the Power Cycle Solely in the Gaseous Phase (Sensible Heat) that requires only a Faction as Many BTUs as compared to Power Cycles like the Rankine Cycle that cause Phase Change (Latent Heat). As Many as Ten Times the BTUs are Used for Phase Change.

The Core Components of Equipment Developed by Linear Power, Ltd. to Accomplish the Ultra-Low Temperature Power Cycle

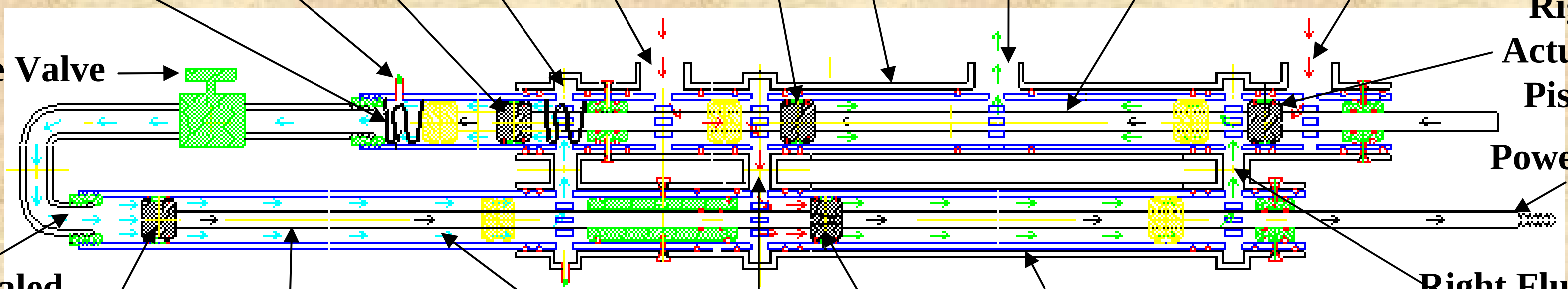
International Patent Applications
have been filed for all of the
following devices by Robert D. Hunt
on behalf of Linear Power.

A New Type of Linear Engine Controlled by either a Cooled Solenoid Actuated Linear Driver or a Pressure Actuated Linear Driver that Controls the Flow of Working Fluid into Pneumatic or Hydraulic Style Rams, which Always Maintains an Optimum 90 Degree Vector Angle for Maximum Energy Transfer Efficiency

Solenoid Valves with Exhaust Cooled Coils actuate Positive Displacement Pistons by alternately switching the input and exhaust of a Linear Driver in order to Produce a Reciprocating Motion of the Power Output Rod

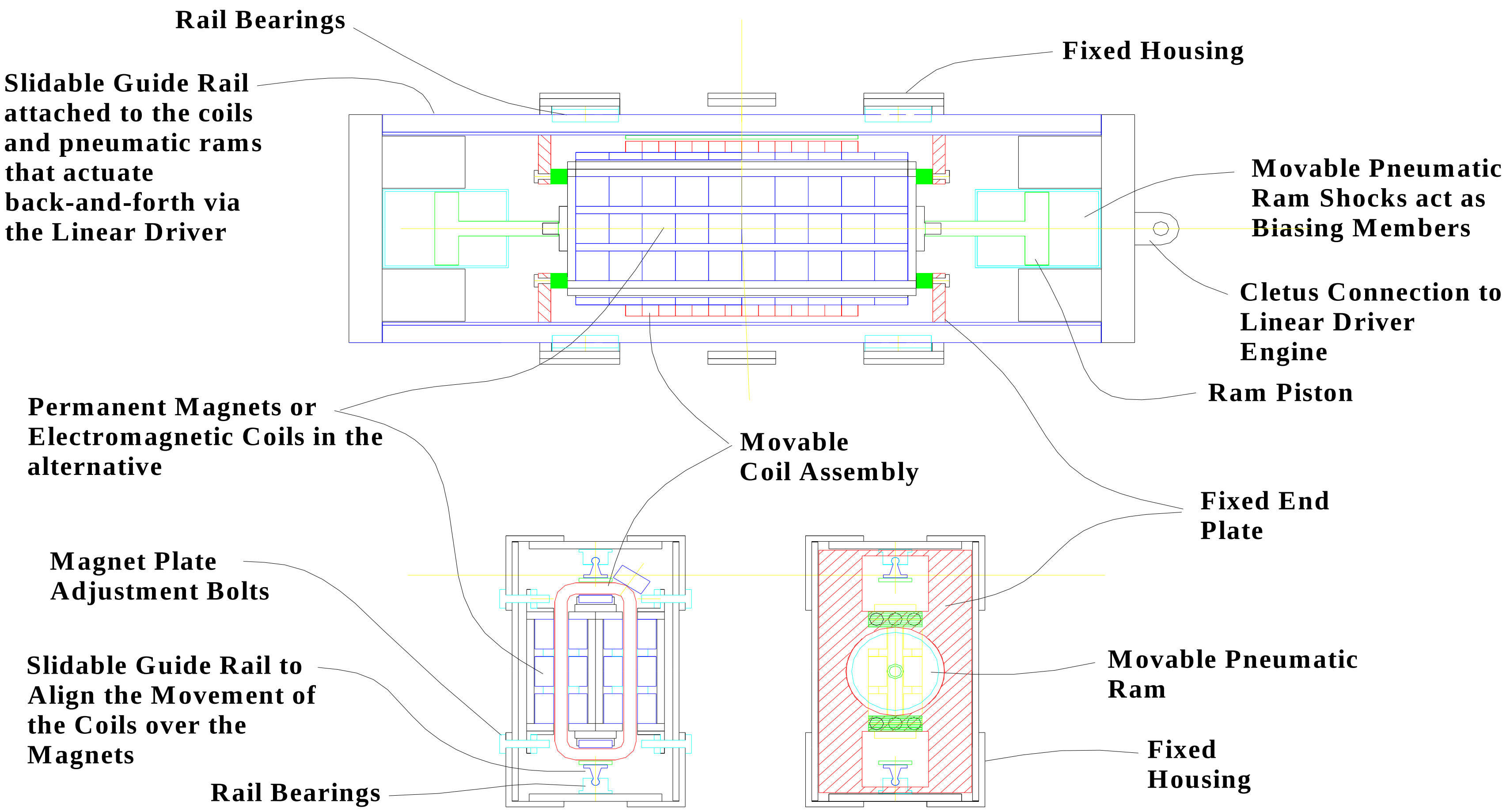


Pressure-Actuated Dual-Compartment Sealed Pressurized Chamber actuates Positive Displacement Pistons by alternately switching the input and exhaust of a Linear Driver in order to produce a Reciprocating Motion of the Power Output Rod



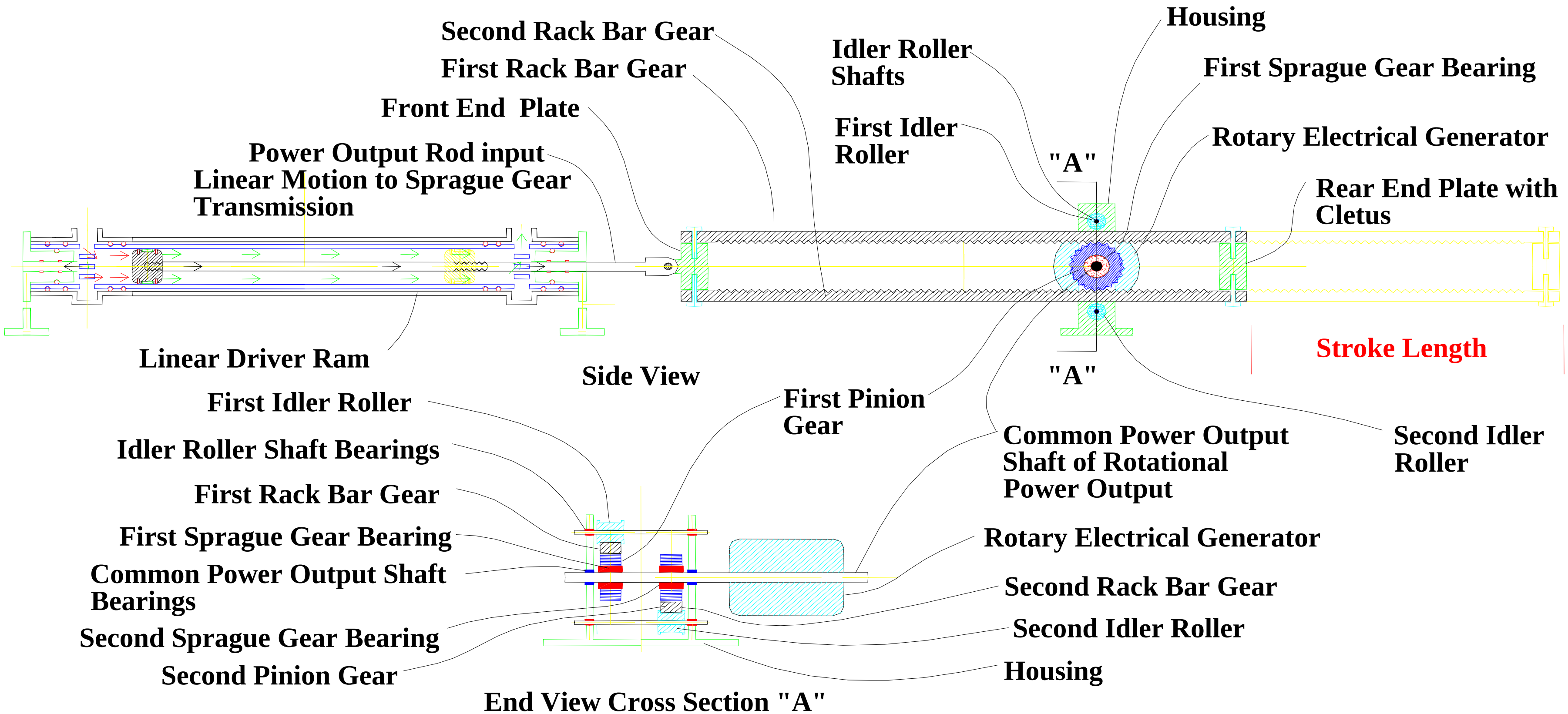
Non-Cogging Linear Alternator having Ferrous Metal Free Coils that Provide No Torque Startup and Reduced Loading

Linear Alternator (320) Detail of Figure Three



Sprague Gear Transmission that Maintains an Optimum 90 Degree Vector Angle of the Power Output Rod to Efficiently Convert Linear Motion to Rotary Motion Power.

Sprague Gear Transmission (340) Detail of Figure Three



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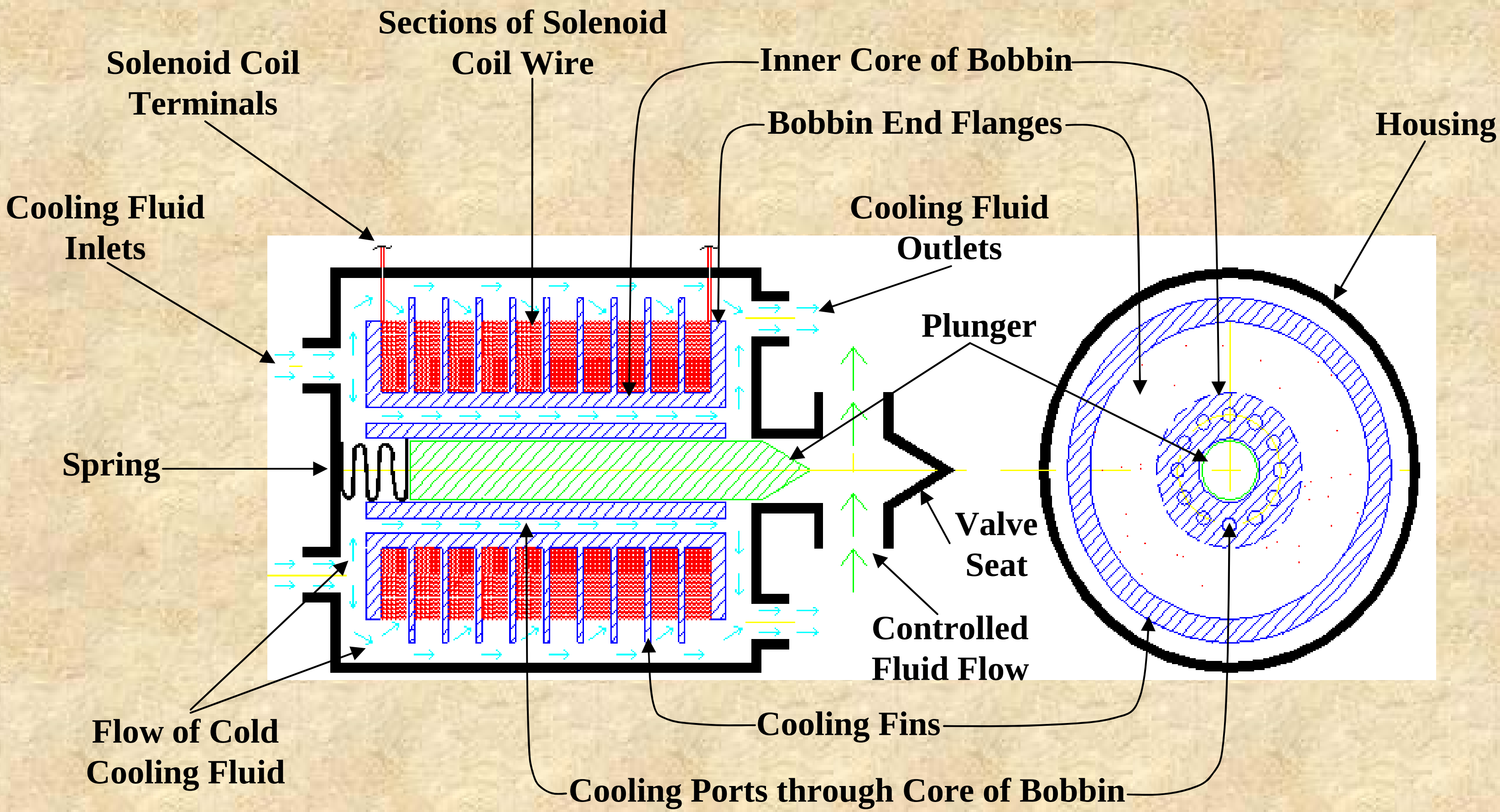
Exhaust Cooled Solenoid Valve Designed for Continuous High-Speed Operation Capable of Handling Large Volumes of Fluid Flow Without Failure due to Heat Build-Up.

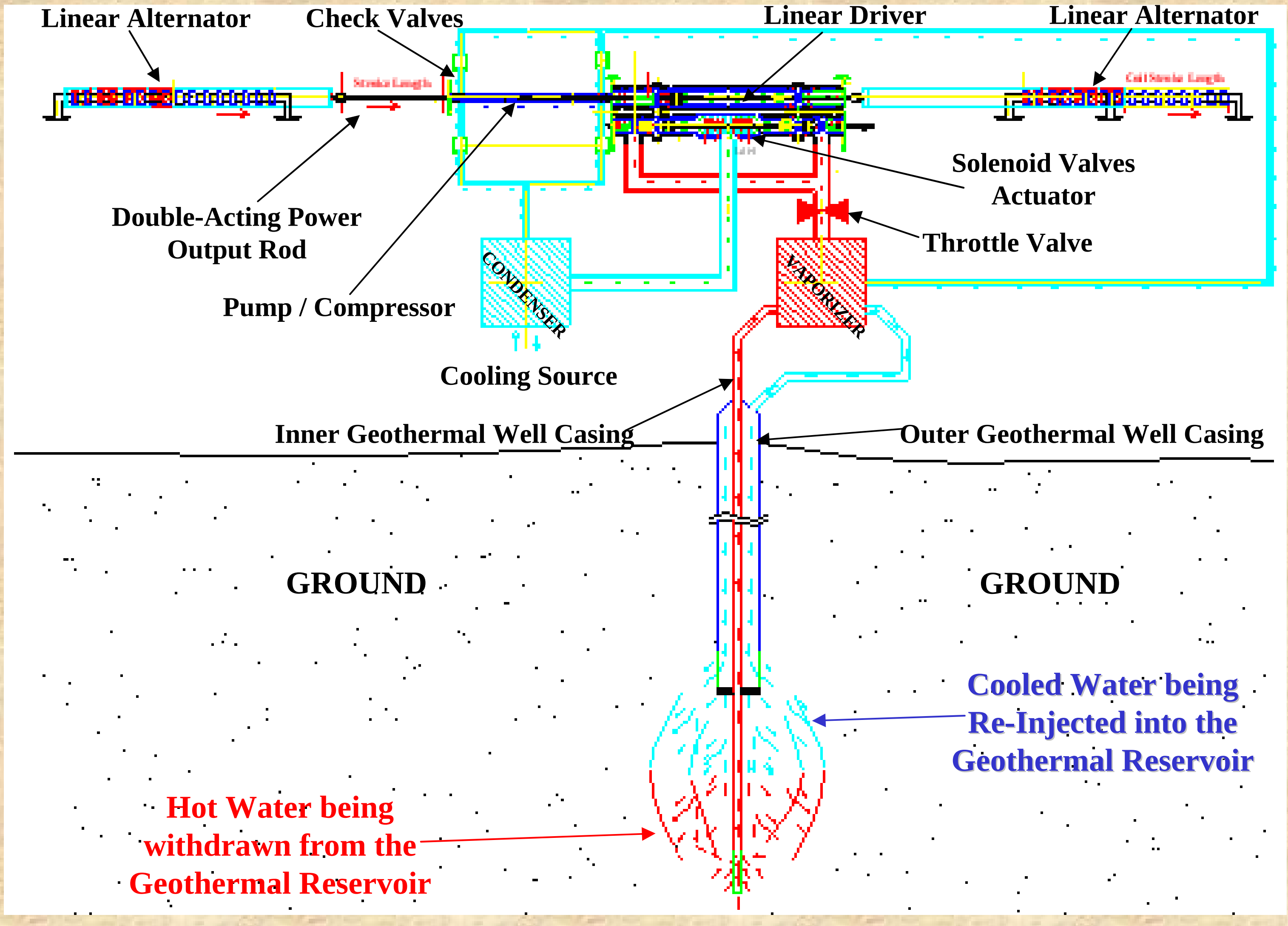


Cross-Sectional Side View | Cross-Sectional End View

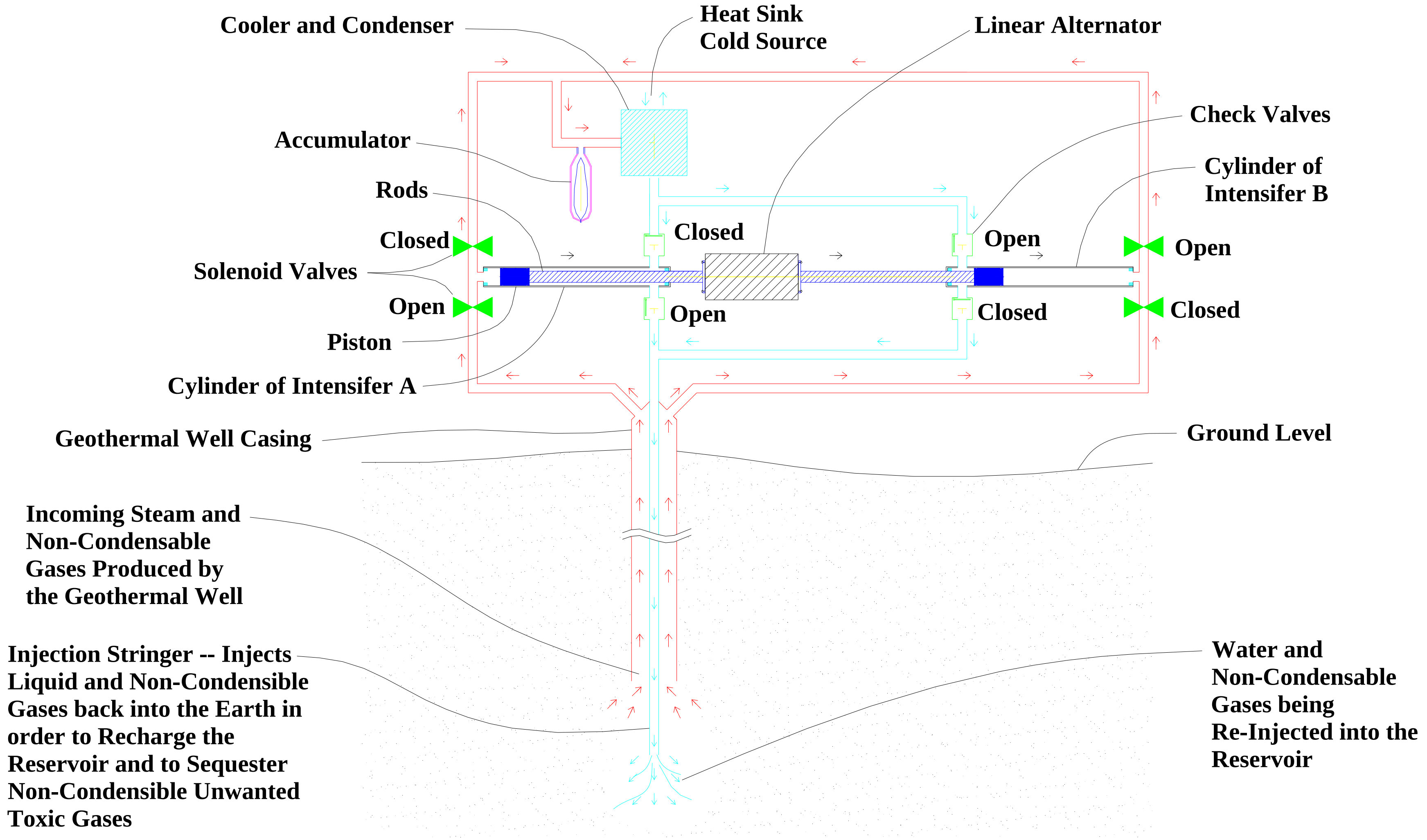
The Linear Driver Engine

Typical System Applications of the Ultra-Low-Temperature Technology

Vertical Geological Fracture that Eliminates Land Area Use and Long Piping Runs for Water Re-injection

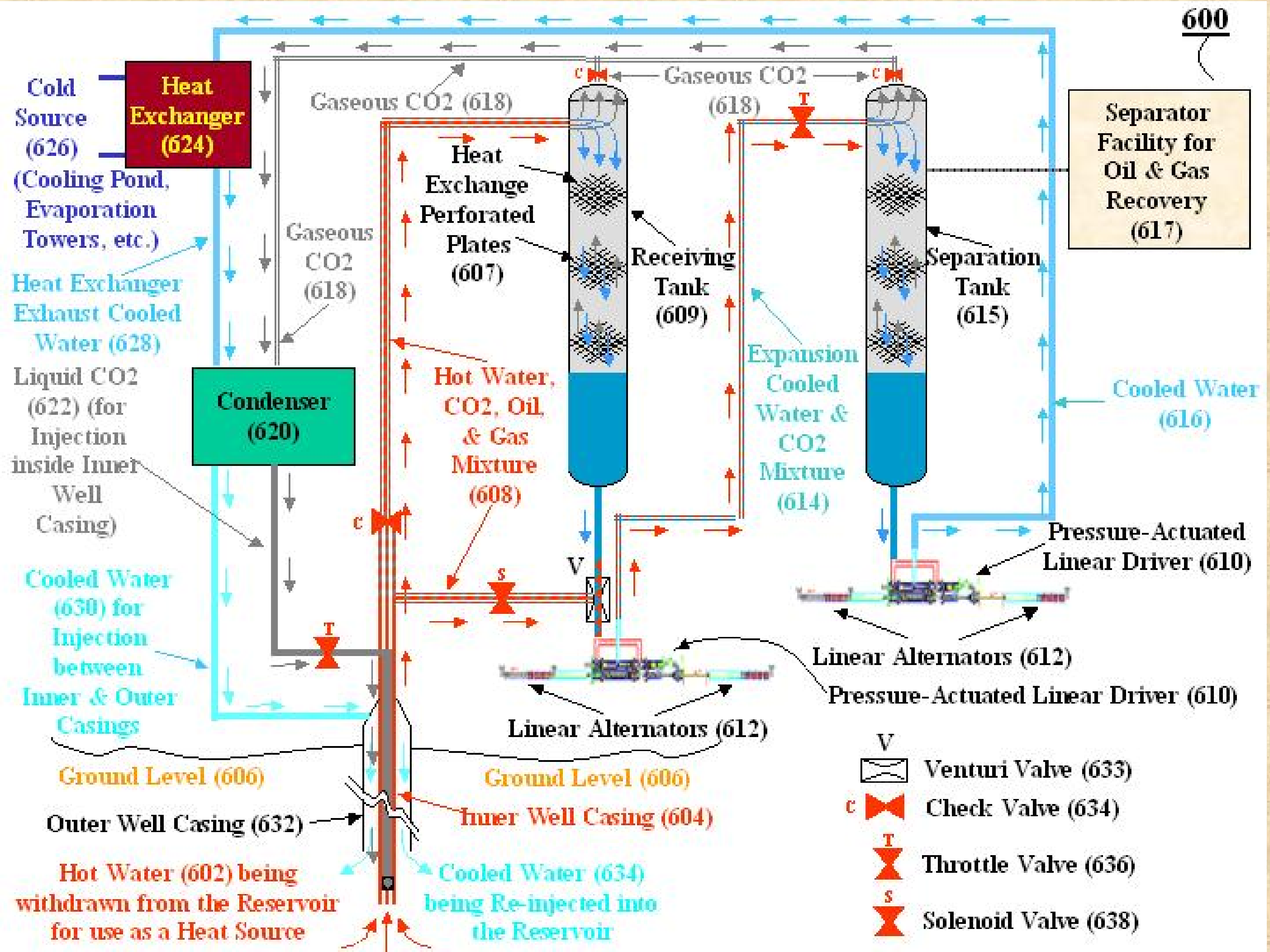


Multiplication of Force at Equalized Pressure Power Cycle

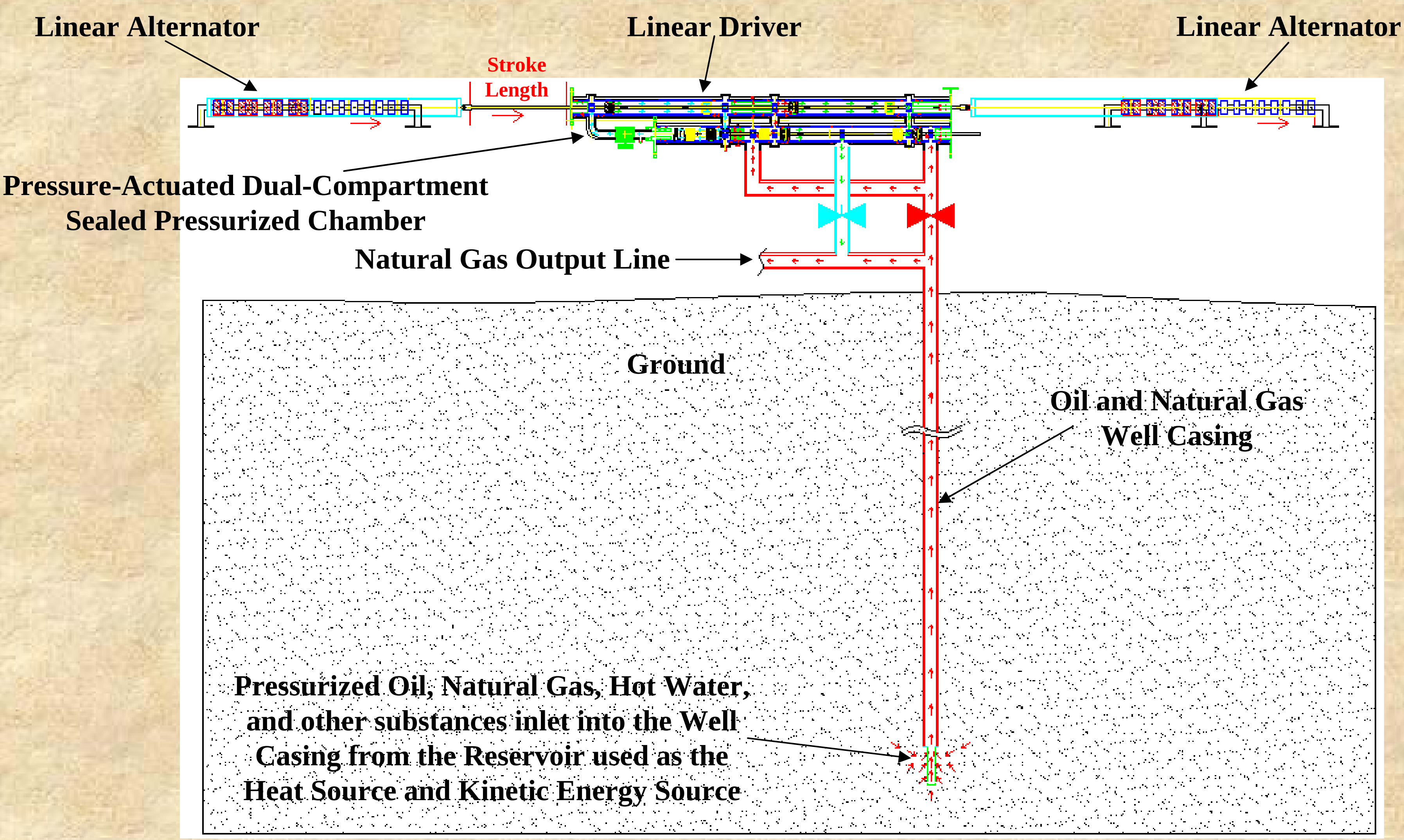


Liquid Propane Well Injection Test

Oil and Gas Well Injection Geothermal Power Generation

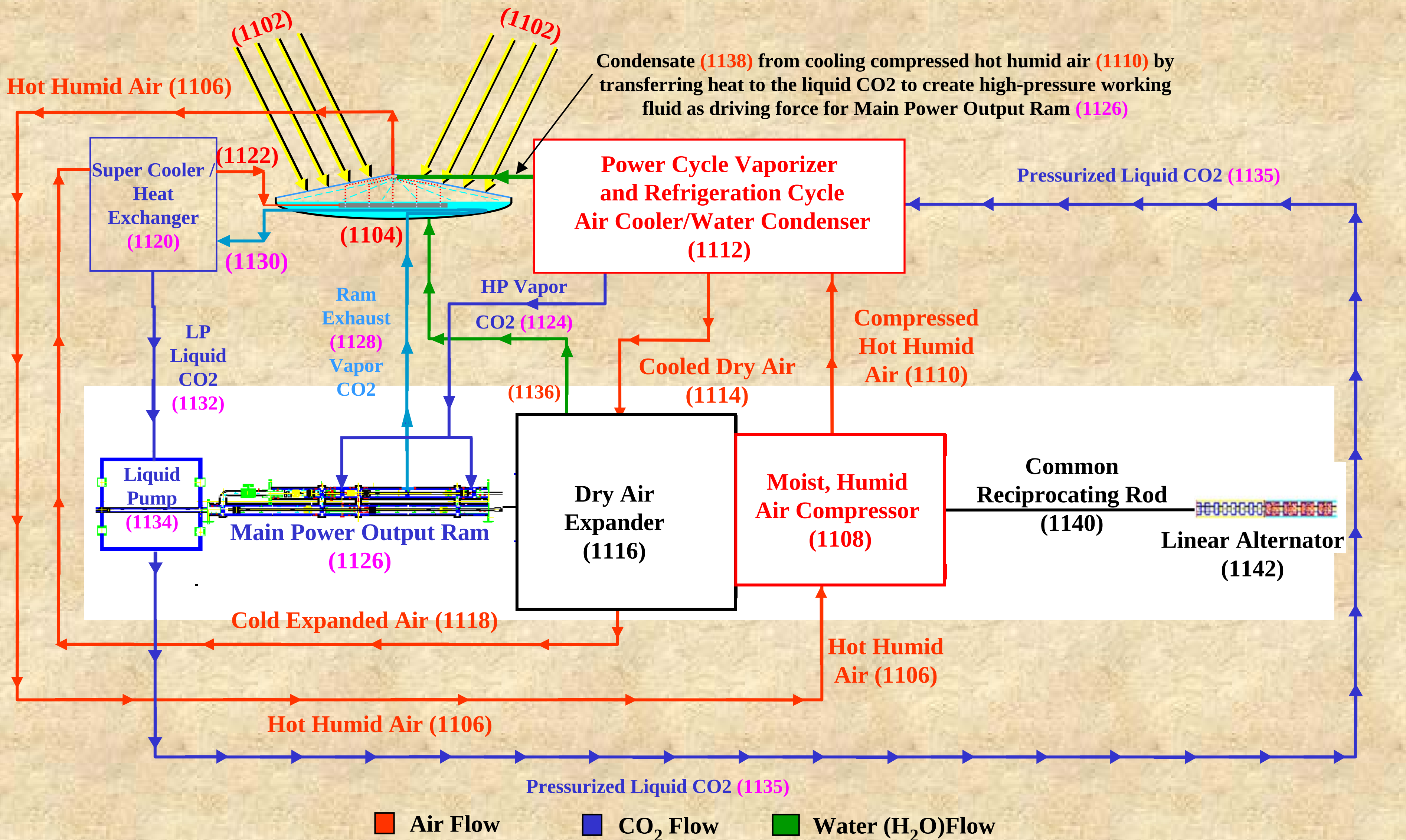


Pressure Actuated Linear Driver and Linear Alternators to produce an Electrical Power Output from the Kinetic Energy (Pressure) of Natural Gas Well

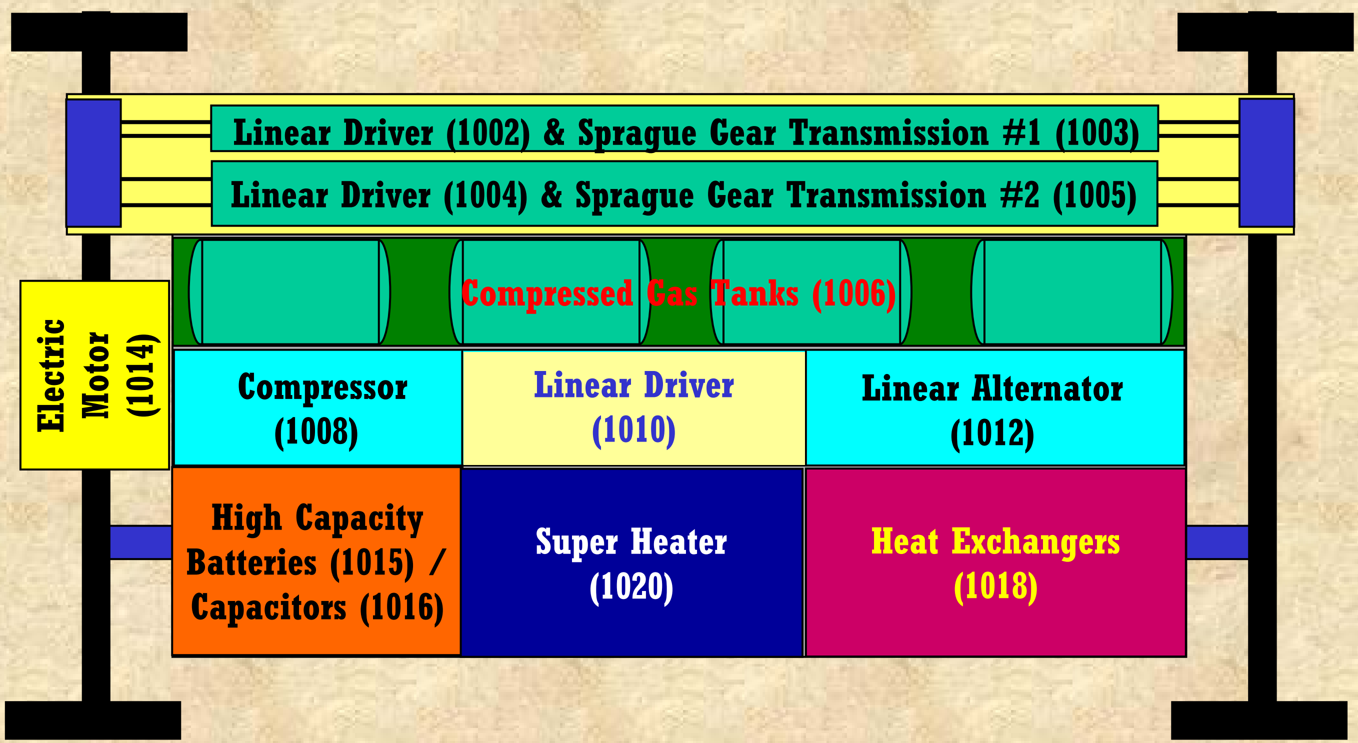


Solar Air Conditioning and Heating Process

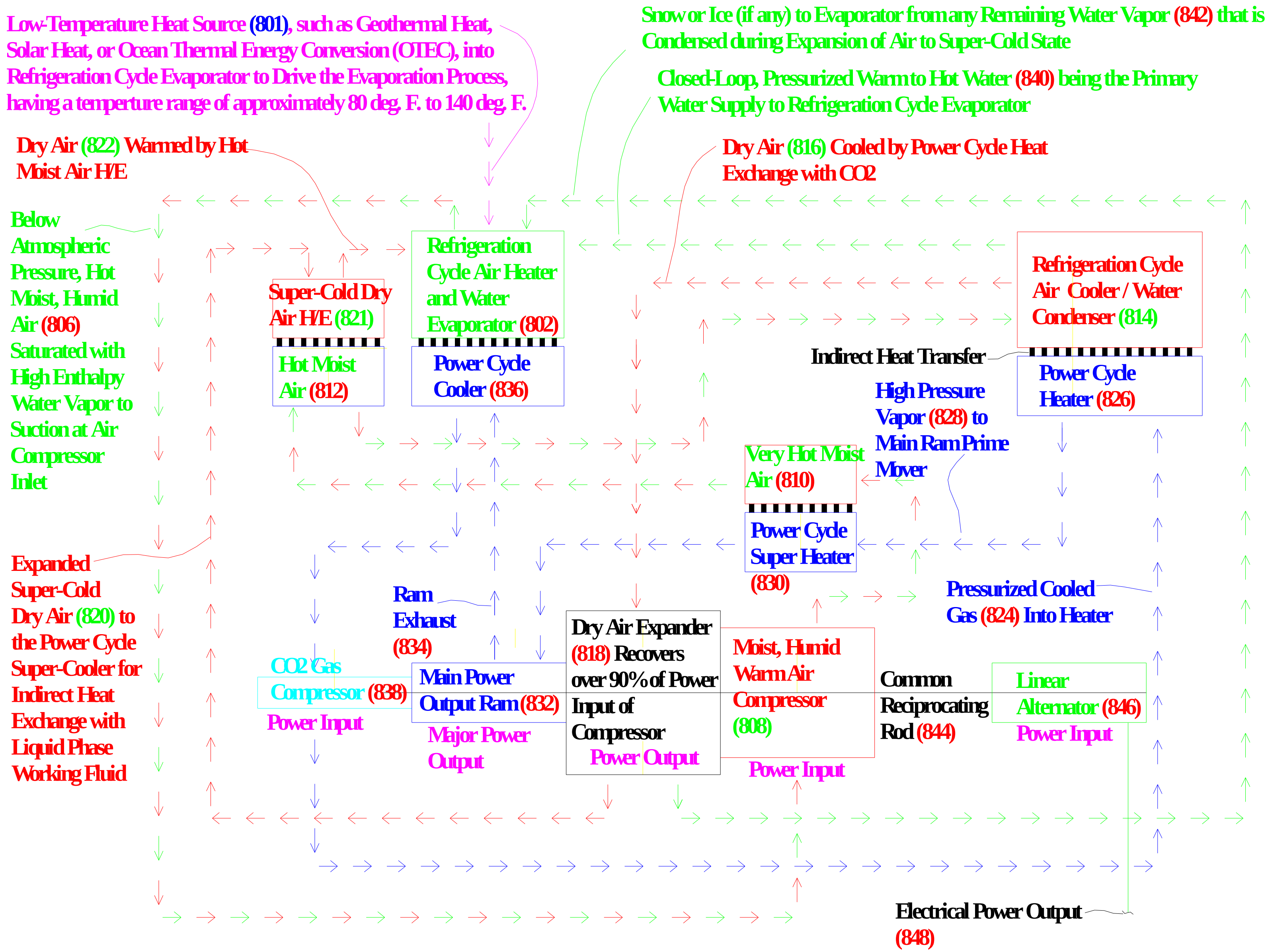
Low Temperature Heat Source (1102) (Solar) for conversion of Warmed Dry Air (1122) to Humid Heated Air (1106) in Solar Humidifier (1104)



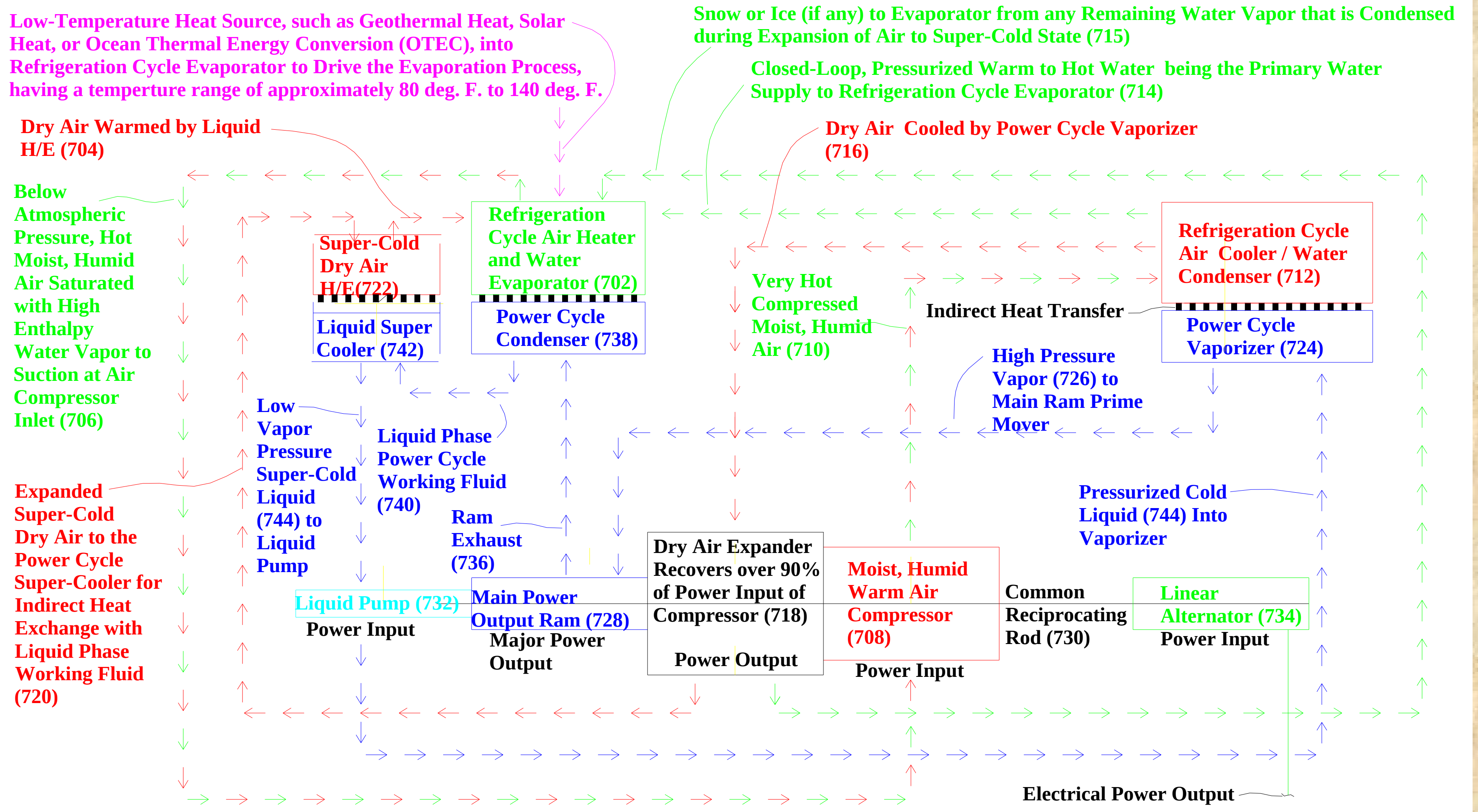
Low-Temperature Automotive Positive Displacement Power Generation with No Nitrous Oxide Emissions



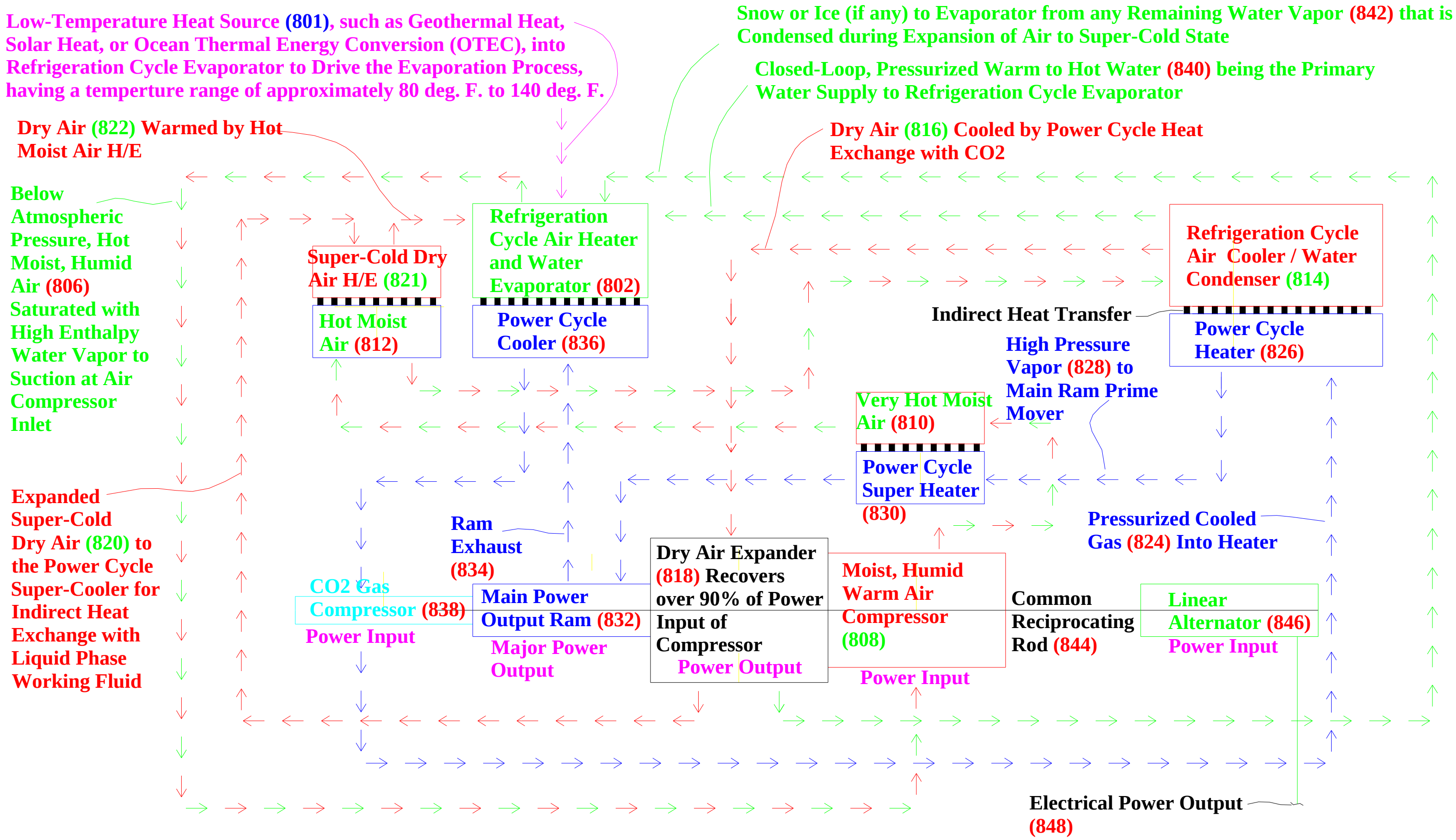
High Carnot Thermal Efficiency, Ultra-Low Temperature All Gas Phase Power Cycle with Closed-Loop Evaporative Cooling, Refrigeration, and Heating Cycle (800)



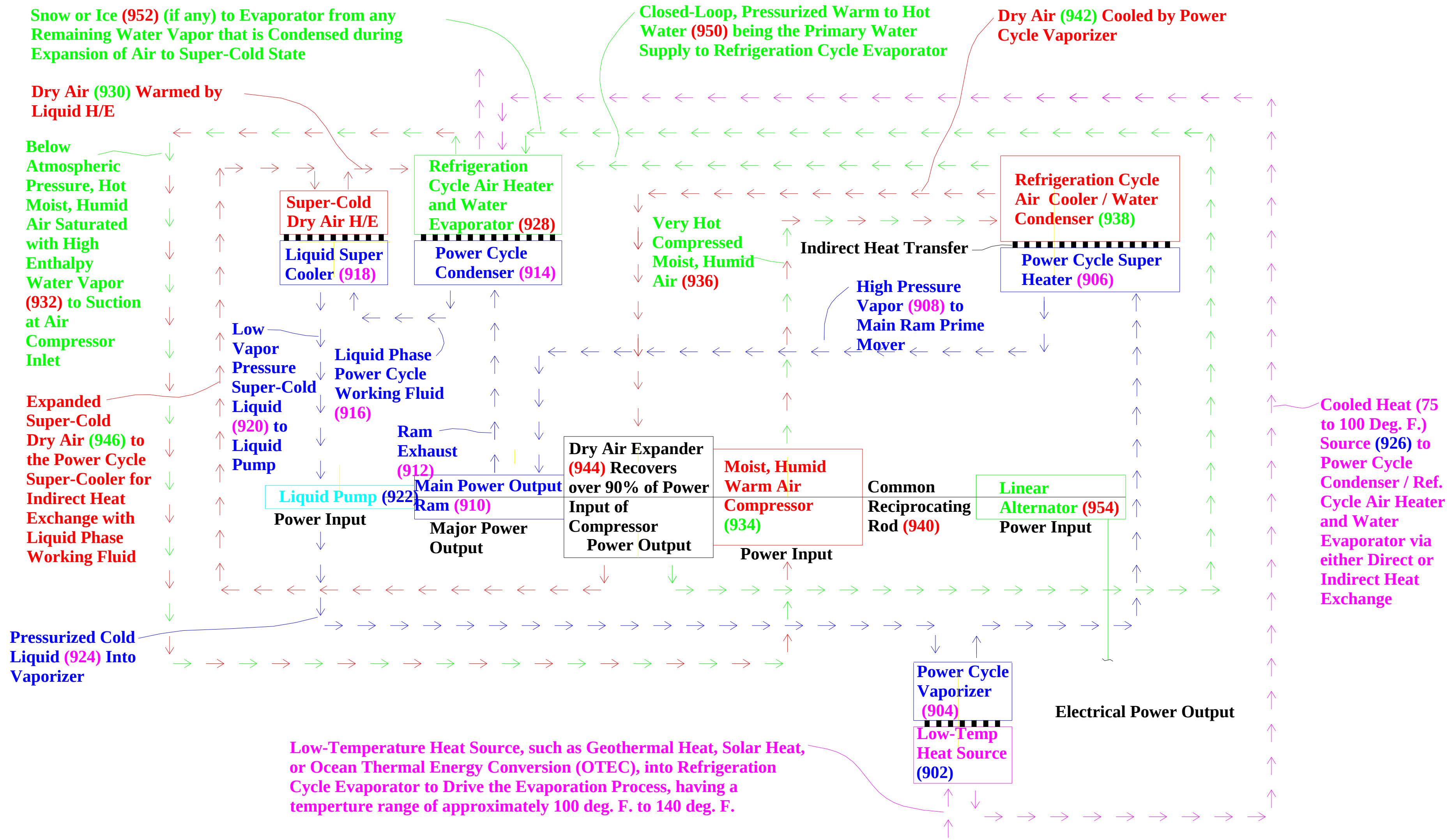
High Carnot Thermal Efficiency, Ultra-Low Temperature Power Cycle with Closed-Loop Evaporative Cooling, Refrigeration, and Heating Cycle with Sufficient BTUs for Phase Change



High Carnot Thermal Efficiency, Ultra-Low Temperature All Gas Phase Power Cycle with Closed-Loop Evaporative Cooling, Refrigeration, and Heating Cycle



High Carnot Thermal Efficiency, Ultra-Low Temperature Power Cycle with Closed-Loop Evaporative Cooling, Refrigeration, and Heating Cycle with Phase Change Supported by Low-Temperature Heat Source



Thank You