



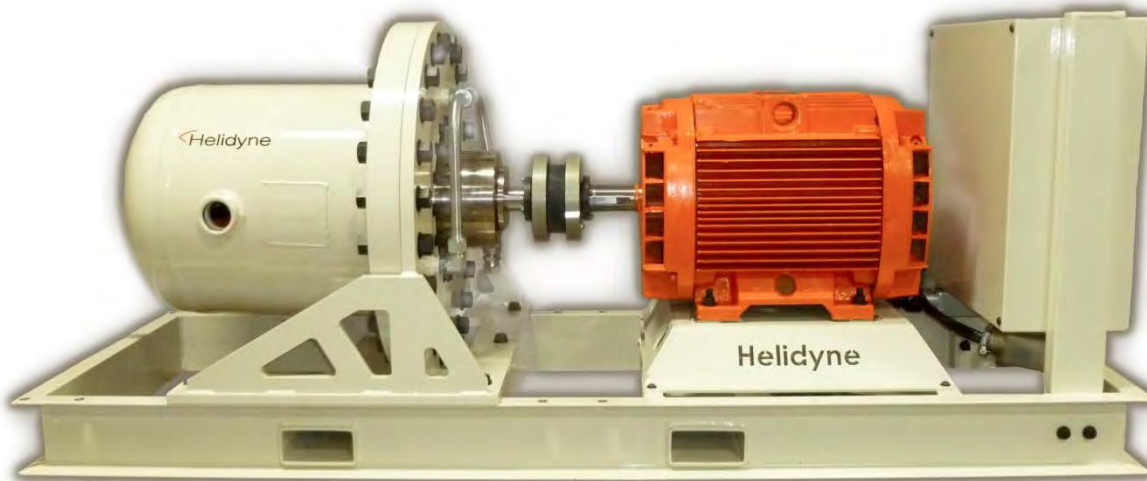
Presented by:

Kevin Kerlin
Co-Founder

March 13th, 2013

New Planetary Expander

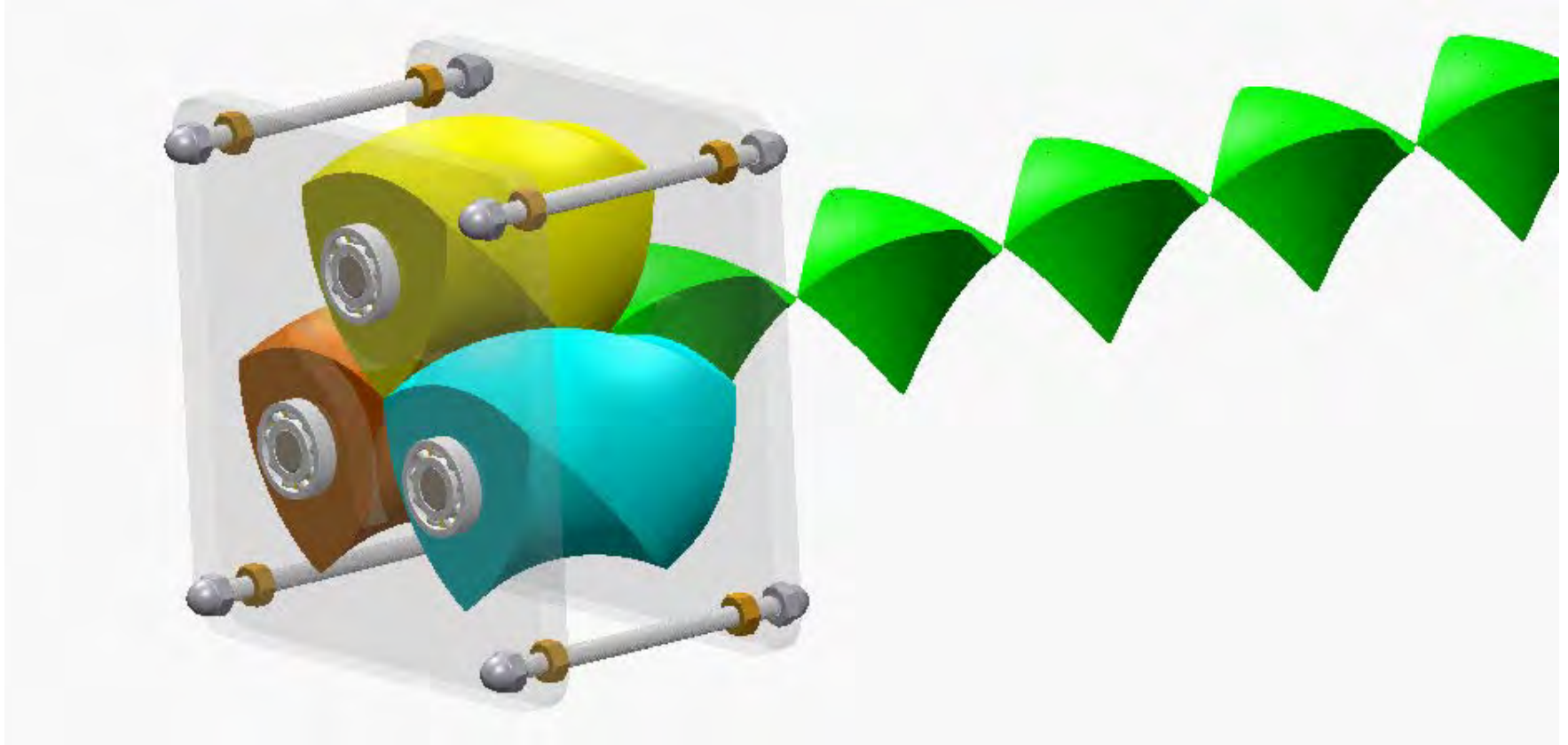
 Helidyne



- 2,000 psi rating
- 1800 RPM
- Oil Free
- Self Cleaning
- Economical
- Rotary Positive Displacement

*First ever public debut will be at 5:45pm

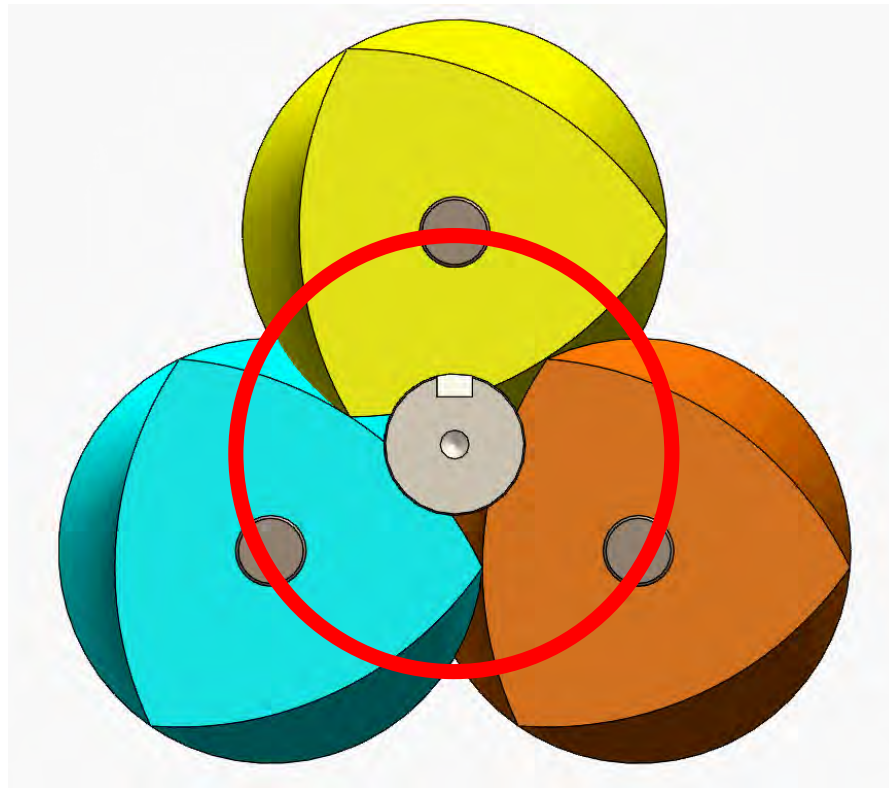
Operating Principle



Patent Pending*



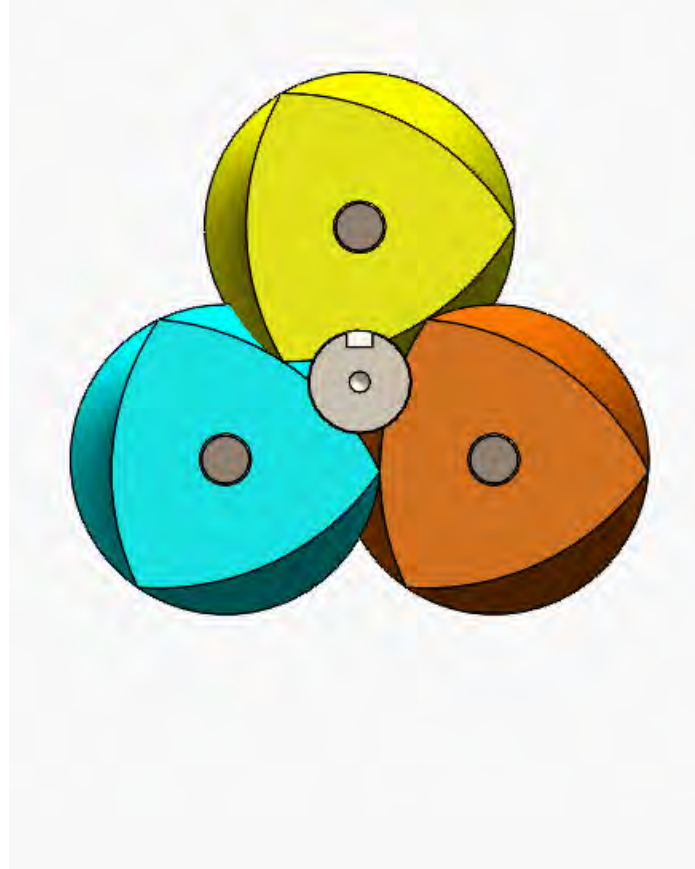
Planetary Design



End view

Engineering Breakthrough

Patent Pending*



Precise Timing

- No Belts or Chains
- No Gears
- No Power Electronics
- No Backlash

Applications: Oil & Gas, Geopressure

Natural Gas Applications

- J-T valve
- Wellhead choke
- Gas processing plants
- Gate stations (gas let-down)



Oil Wells: producing and orphaned



Geopressure to Green Energy

*150,000 pressurized wells in Texas
over 4,000 producing wells in the Gulf

Challenges of Total-Flow

Natural Gas

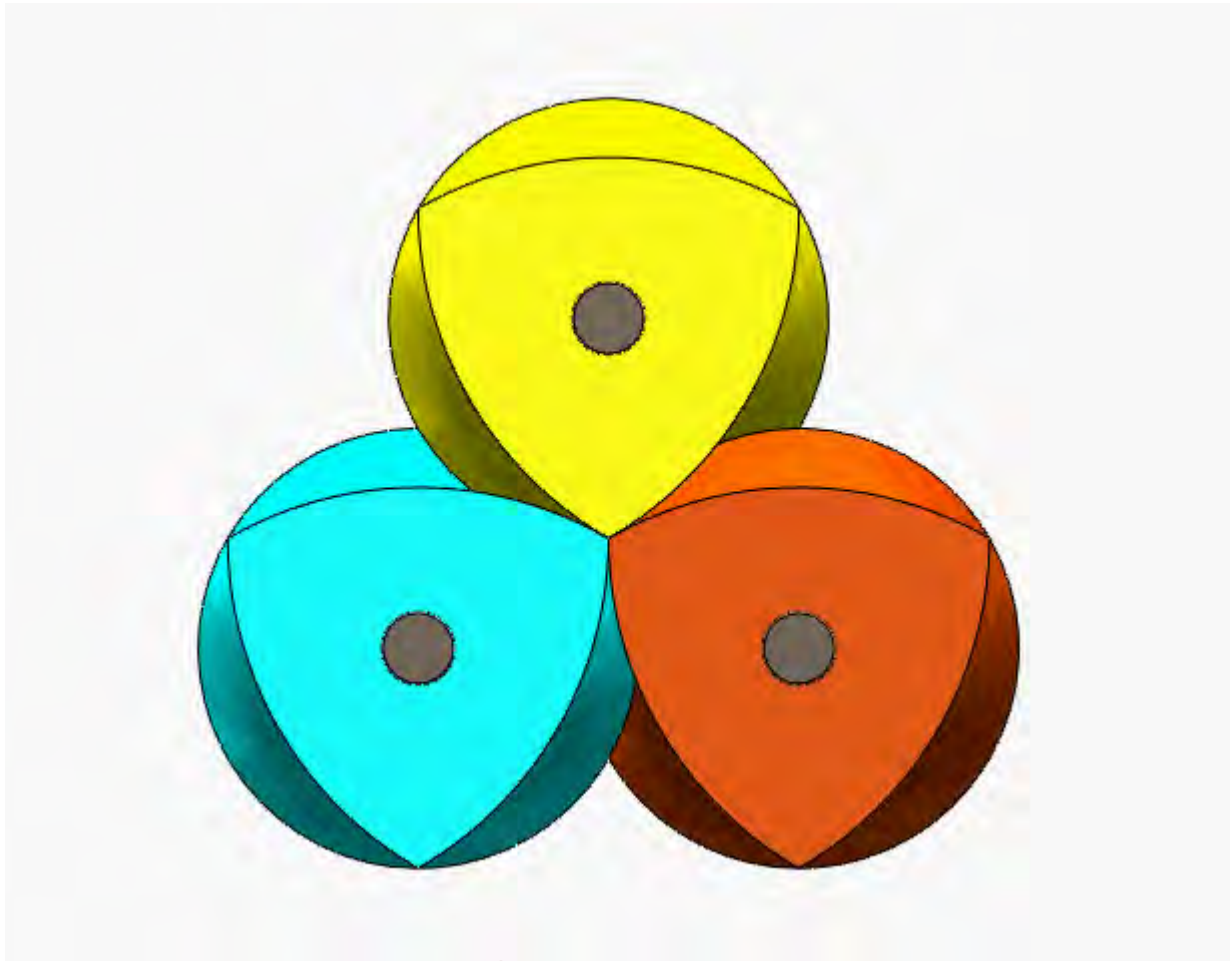
- Hydrate Formation
- Machine Lubrication
- Flow variation

Geopressure

- Scale Formation
- Corrosion
- Incompressible fluids



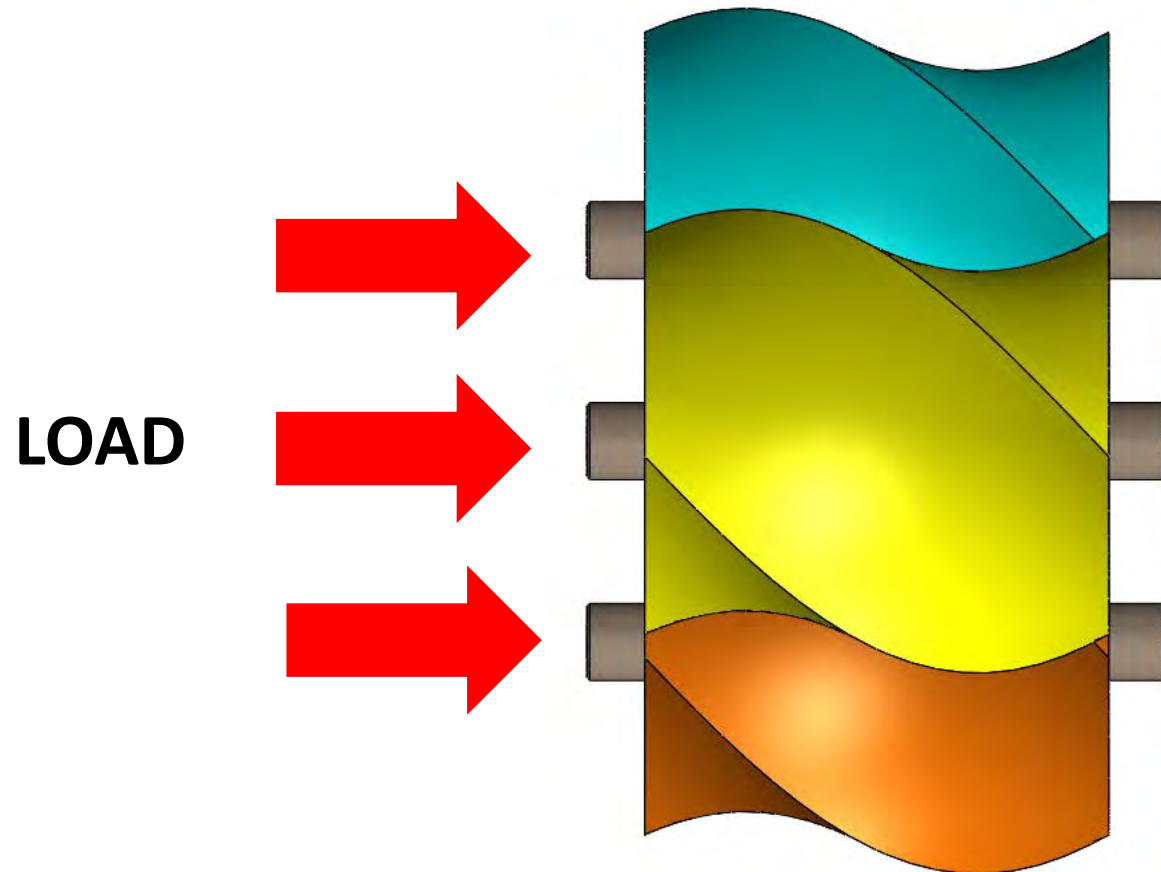
Self-Cleaning Rotors



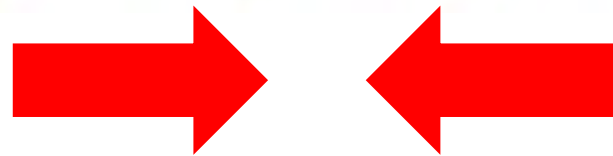
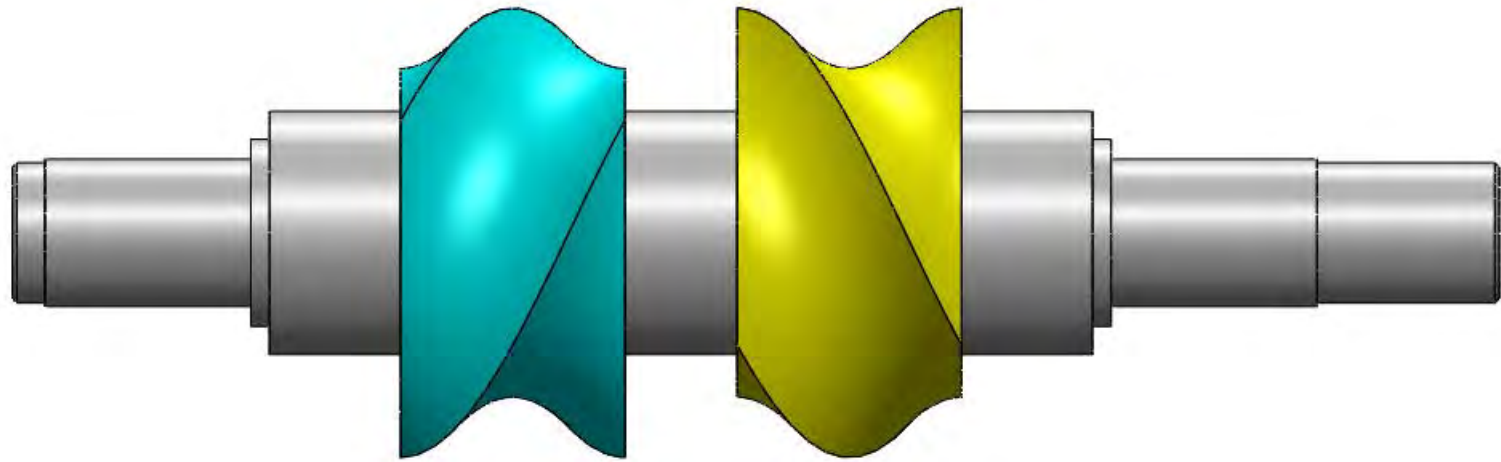
Oil Free Rotors

Challenges of High Pressure Fluids

Extreme Thrust Loading



Solution to High Pressure Fluids



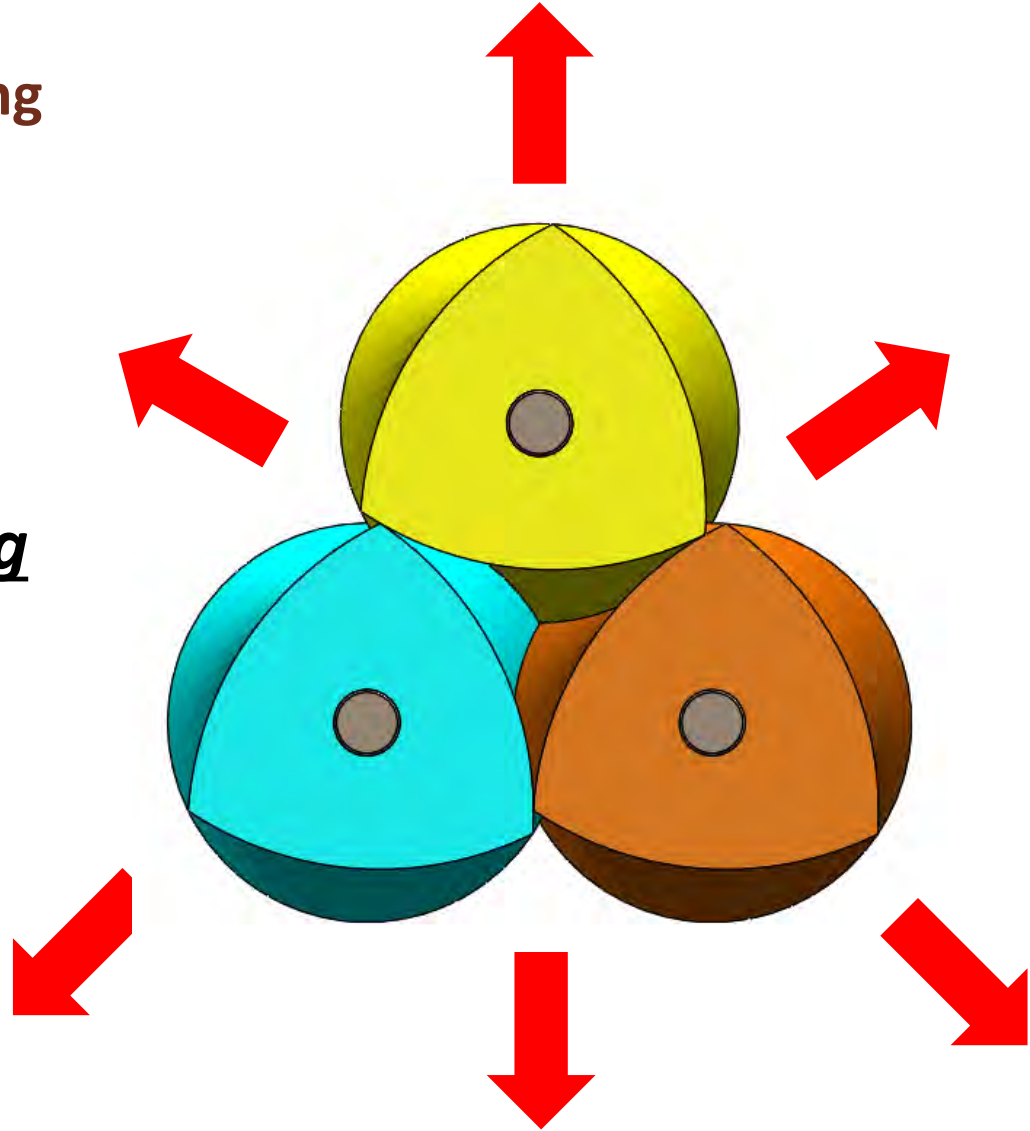
BALANCED LOAD

REDUCED WATERHAMMER

Solution to High Pressure Fluids

Outward radial loading

3X Pressure Rating





Pressure vs. Thermal

- 1. Not dependent on temperature**
- 2. Less plant equipment**
 - No cooling towers, cooling water
 - No heat exchangers
 - No well or feed pumps
 - Less parasitic loads
- 3. Less drilling expense**
 - Use existing reinjection and production wells

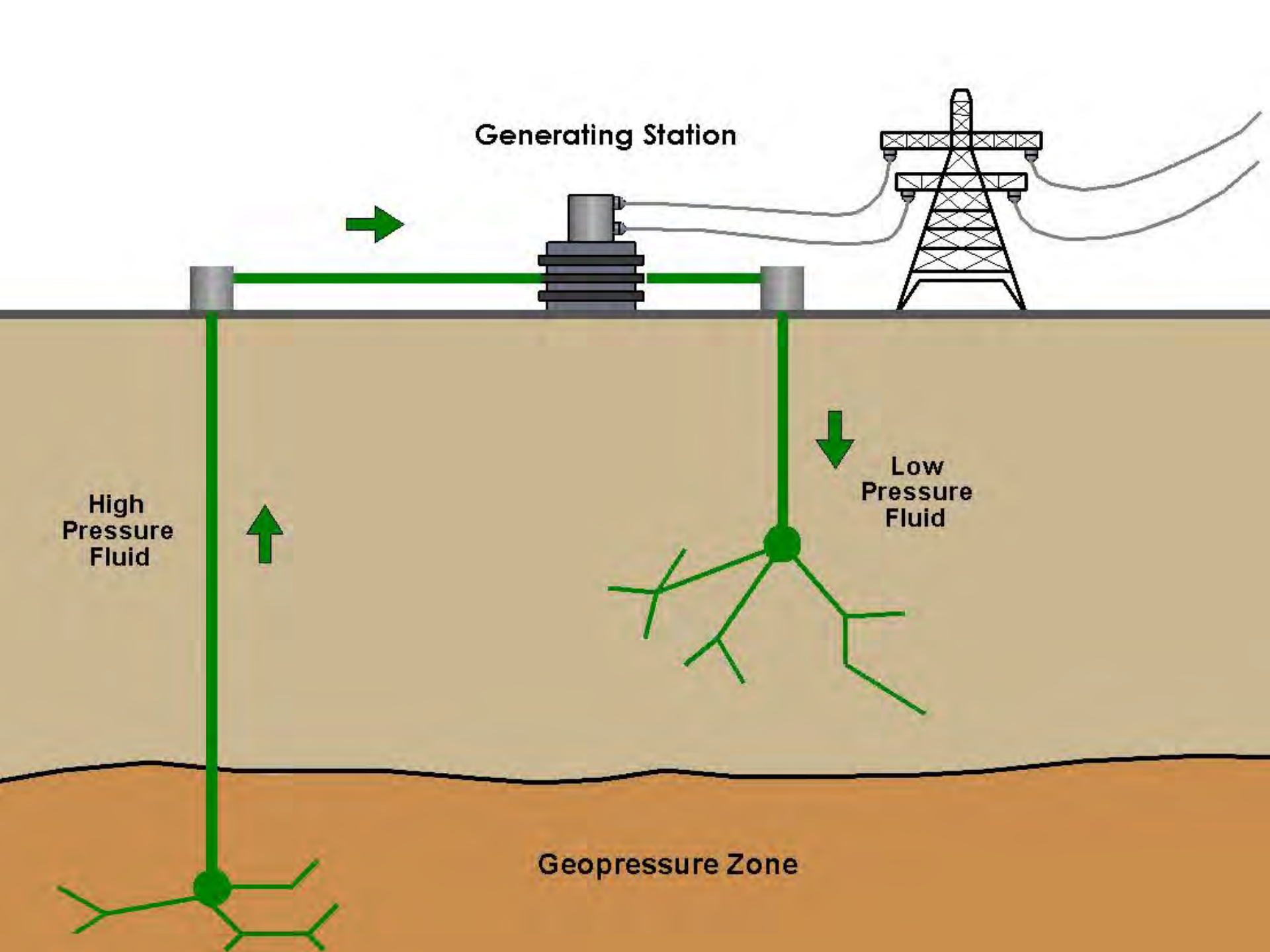
No wildcatting

Any Questions?

Unveiling event at 5:45pm















www.helidynepower.com



Prior Attempts

Challenges

	Pelton Wheel	Twin Screw	Reciprocating	Helidyne
Shaft Seals				
Scale Removal				
Flow-Rate				
Oil-Free	