

# Planetary Expanders

Presented by:

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March 13<sup>th</sup>, 2013



# New Planetary Expander

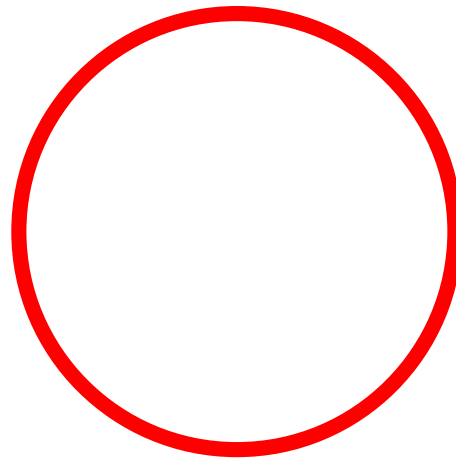
- 2,000 psi rating
- 1800 RPM
- Oil Free
- Self Cleaning
- Economical
- Rotary Positive Displacement

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



# Operating Principle

# 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 TotalFlow

## Natural Gas

- Hydrate Formation
- Machine Lubrication
- Flow variation

## Geopressure

- Scale Formation
- Corrosion
- Incompressible fluids



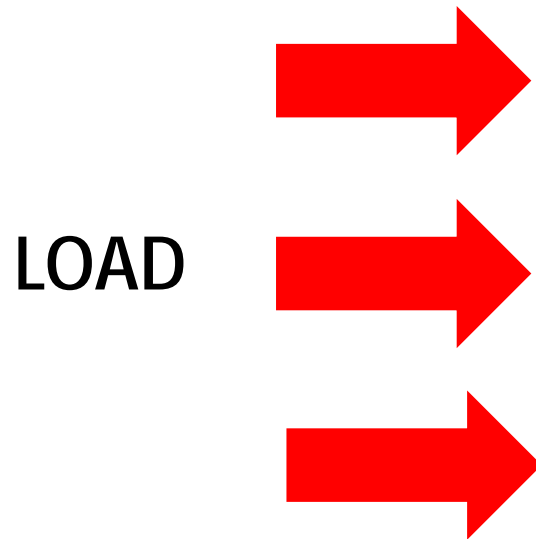
# Self-Cleaning Rotors

**Oil Free Rotors**



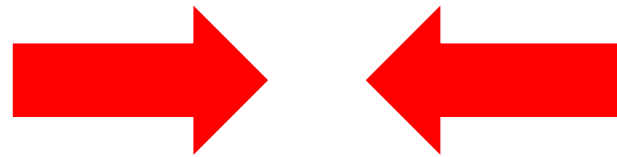
# Challenges of High Pressure Fluids

Extreme Thrust Loading





# Solution to High Pressure Fluids



**BALANCED LOAD**

**REDUCED WATERHAMMER**





# Pressure vs. Thermal

# Any Questions?

Unveiling event at 5:45pm

[www.helidynepower.com](http://www.helidynepower.com)



# Prior Attempts

Shaft Seals

Scale Removal

Flow-Rate

Oil-Free