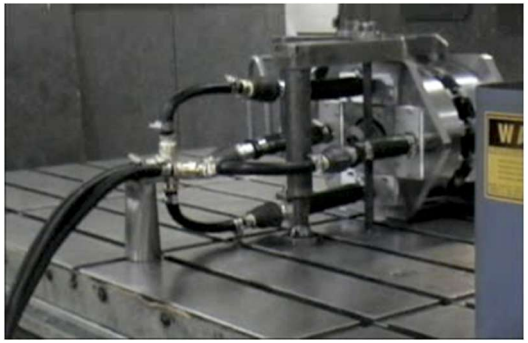
RadMax Pump

The RadMax positive-displacement pump pairs the high volume capacity of a positive-displacement pump with the simplicity and cost advantages of a centrifugal pump.

Because of its unique design, a RadMax pump is able to utilize the volumetric displacement energy of the fluid and the kinetic energy of the vane action. This results in an extraordinarily energy efficient pump.

Whether your application calls for high performance with low viscosity liquids at high pressures, or thick products at lower pressures, the RadMax pump family can accommodate almost any capacity and pressure requirement!



RadMax Prototype Pump

Applications

Because of its efficient, high-volume output, the RadMax pump is well suited for applications in:

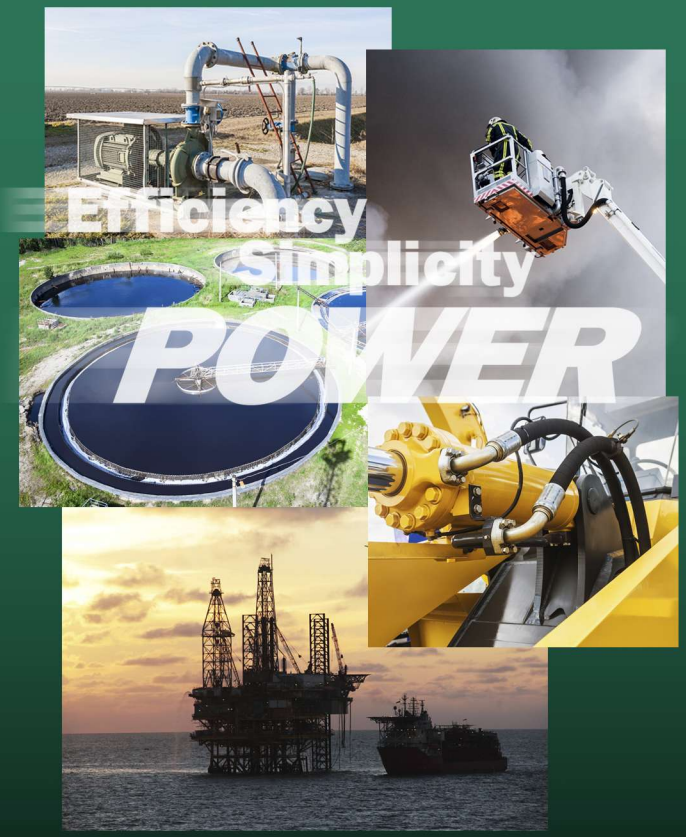
- Fire protection
- Water and flood control
- Irrigation
- Marine
- Water treatment
- Oil and gas industry plant, down hole and subsea
- Industrial plant processes
- Heavy industry and construction

Efficiency
Simplicity
Power

RADMAX® TECHNOLOGIES

RadMax Technology Advantages

- Compact size & weight
- High power to weight ratio
- High volume output to size and weight ratios
- High internal compression, expansion and pump ratios possible (up to 20:1)
- Continual, smooth, low noise rotary motion
- Low part count and fewer moving parts); conducive to rapid change-out replacement, reduced maintenance costs and increased reliability
- Rotary motion input and output porting does not require complicated valving systems
- Easily scalable from small to very large
- Multiple devices in one compact unit are possible



RADMAX® TECHNOLOGIES

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Positive Displacement Pumps

RADMAX® TECHNOLOGIES

Efficiency Simplicity Power

Introducing RadMax

A truly revolutionary rotary concept, RadMax patented devices are designed for Efficiency, Simplicity and Power. If your application calls for highly efficient power, or pumping in a light and small footprint, RadMax has a solution for you!

SIMPLICITY: Only 2 unique moving parts, the vanes and rotor – does not use pistons or valves, reducing assembly and maintenance costs.

POWER: Compact size and high output results in up to 6 times size and weight savings over a piston engine of same horsepower.

EFFICIENCY: Delivers better than 1 hp per pound of engine weight, and more than 1.5 hp per cubic inch of engine displacement.

RadMax Product Family

RadMax devices are a family of efficient, lightweight, and low noise internal combustion engines, compressors, gas expanders and pumps.

Internal Combustion Engines

Configurable as a compression ignition (diesel) or spark ignition using gasoline, natural gas, or other fuels.

- Compact size & weight
- High power to weight ratio
- Low part count and fewer moving parts

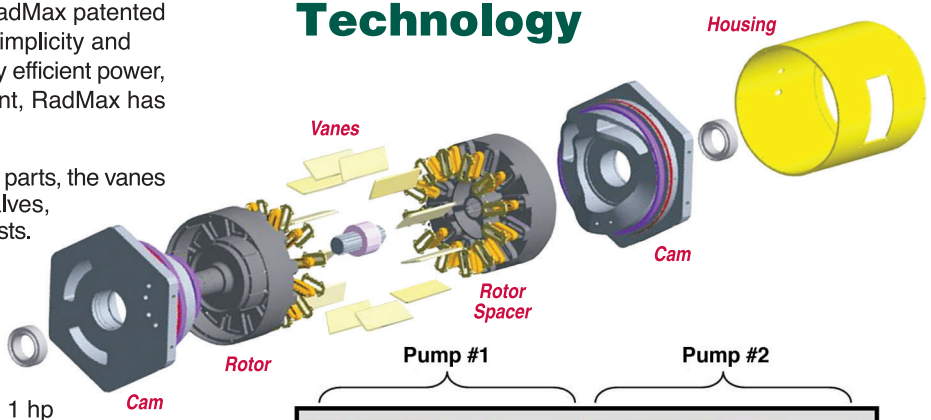
Compressors & Gas Expanders

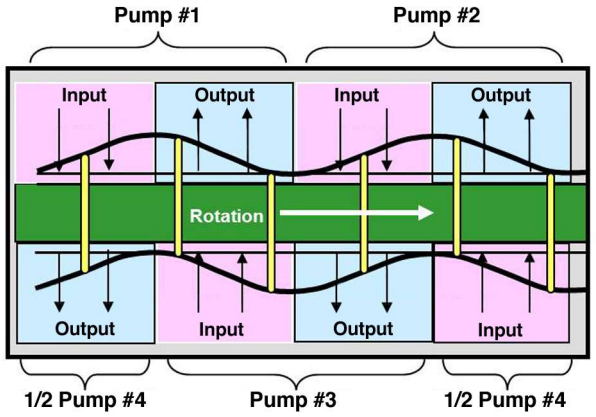
- Incorporates the advantages of both positive displacement and centrifugal devices
- High internal compression ratios possible (20:1)
- High volume output to size ratio

Positive Displacement Pumps

- Positive displacement with the simplicity and efficiency of a centrifugal pump
- High output volume to size and weight ratios
- Self-priming & auto re-priming

RadMax Technology





RadMax Pump Cycle

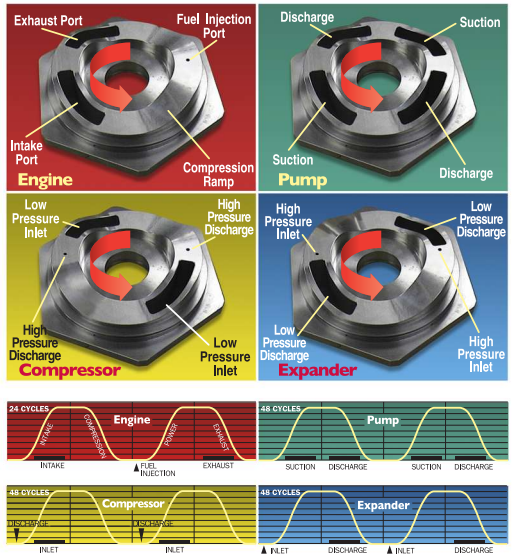
The RadMax pump design is a combination of four distinct sections: two complete suction and discharge cycles on each cam in the standard two cam configuration. During rotor revolution the vanes move axially following a sinusoidal shaped cam pushing the chamber's volume out of the pump when the adjacent vanes extend or retract.

Different porting options into and between the sections allow for the capability to have separate pumping actions and flow rates in one device, or pump several different streams at once.

One Technology; Multiple Functions

By simply changing the cam profile and/or intake and exhaust porting locations, a RadMax device can be designed as an internal combustion engine, compressor, pump, gas expander, or a combination of the functions.

VERSATILE RADMAX CAM CONFIGURATION



Key Advantages

In a RadMax pump the rotor spins continuously in one direction creating a smooth pumping action. Because the upper and lower faces of the rotor are 90-degrees out of phase, the pump is always balanced and exhibits minimal vibration.

Additionally, a pump cycle cam potentially can be combined with a RadMax engine or expander cycle cam to form a compact, combined-cycle, self-powered pump.

Other advantages include:

- Four independent pump loop capability
- High efficiency & output for its size
- Self-priming & auto re-priming
- Extended unlubricated operation
- Better handling of gas-entrained liquids
- Pump in either direction
- Scalability from small to very large