MTH PUMPS

# Regenerative Turbine Pumps vs. Rotary Vane Pumps

**Regenerative Turbine Pumps** represent the most economical, high performance alternative for low flow applications involving moderate to high pressures. By combining years of regenerative turbine pump designs with precision computer controlled manufacturing, MTH Pumps deliver high efficiency pumping operation, even at low NPSH. High quality parts and an easily serviceable design provide low maintenance and long life.

## Turbine Pump Advantages Over Rotary Vane Pumps:

### Longer life

A regenerative turbine pump's impeller is hydraulically balanced and uses a mechanical seal to minimize wear by eliminating any touching parts while in operation. The sliding vane carbon impellers found in a rotary vane pump have a finite life as it promotes premature wear, introduces carbon to the system, and may contaminate the process fluid.

### Continuous, Pulsation Free, Smooth Flow

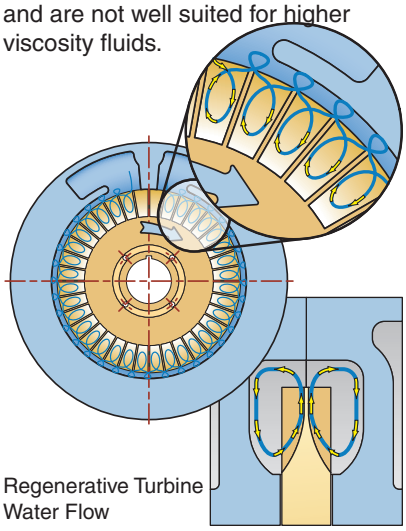
Regenerative Turbine Pumps build flow and pressure by the constant velocity of fluid across the impeller vanes and water channels. Rotary vane pumps require a disruption in water flow to force the water through the pump. This leads to a pulsation in water flow which is not present in a regenerative turbine pump.

### Fewer moving parts.

Regenerative turbine pumps contain only three major components, allowing for easy service even in the field. Rotary vane pumps often have complex housings containing many parts.

### Versatile capacities and pressures.

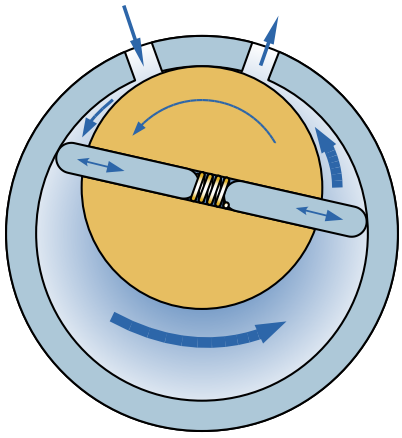
Regenerative Turbine pumps are capable of achieving very high pressure at very low to moderate flows. Rotary vane pumps can only handle thin liquids at moderately high pressures and are not well suited for higher viscosity fluids.



Regenerative Turbine Water Flow

### More mounting options.

While most rotary vane pumps are either base or pedestal mounted, Most MTH regenerative turbine pumps can be base or pedestal mounted, as well as close coupled and vertical flange mounted. Some models are also vertical inline, while others have inlet/discharge orientation options.



Rotary Vane Water Flow

## Regenerative Turbine Pump Features

### Water Passage Design

MTH masters one of the most critical design considerations of regenerative turbine pumps - the shaping of water passageways to achieve maximum capacity and pressure while minimizing horsepower requirements. By optimizing water passageway cross-sectional profiles for each impeller, MTH improves both efficiency and pressure in the standards realized by previous techniques.

### Impeller Profile

One of the most notable improvements in regenerative turbine pump technology, involves the ability to determine the optimum impeller width and blade length. These factors have a significant effect on the required horsepower versus pressure curve for regenerative turbine pumps. By optimizing these for each pump, peak efficiency is improved and "off peak" horsepower requirements are reduced as well.

### Impeller Blades

After the most favorable impeller profile has been determined for a particular water passageway cross-section, MTH calculates the number of blades needed to maximize the performance of that pump. Current blade designs increase both efficiency and design pressure without the manufacturing difficulties associated with producing contoured blade impellers. State-of-the-art computer controlled machines simplify manufacturing of the various MTH impellers. The result is a high performance pump providing efficiency characteristics exceeding those of much more expensive units.

### NPSH Requirements

MTH regenerative turbine pumps meet low net positive suction head (NPSH) requirements without efficiency loss. This is achieved by keeping the inlet fluid velocity low and then gently accelerating to passageway velocities. Special ramps are responsible for this gentle fluid entry into the impeller blades and account for the high inlet efficiency in the MTH pumps.

### Steep Head/Capacity Curve

Pumping capacity varies only slightly as pressure changes. Steep pressure characteristic overcomes temporary line resistances.

### Self Adjusting Impeller

MTH impellers utilize balancing holes to promote hydraulic self-centering and to eliminate the need for external adjustment. The impeller exerts no thrust load on the bearings, thereby extending service life. Self-centering is equally effective whether mounted in the horizontal or vertical position.

MTH PUMPS
401 West Main Street • Plano, IL 60545-1436
Phone: 630-552-4115 • Fax: 630-552-3688
Email: SALES@MTHPUMPS.COM
http://WWW.MTHPUMPS.COM