ROTO-JET®

High Pressure Pitot Tube Pumps

WEIR

Product Line Overview

Model RD-11 Pump

Capacity:	to 150 gpm (34 m³/hr)
Heads:	to 1500 ft. (457m)
Pressures:	to 650 psi (45 Bar)
Temperatures:	to 250° F (121° C)
Maximum Speed:	4858 RPM

Model R11 Pump

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Temperatures:	to 250° F (121° C)
Maximum Speed:	4858 RPM

Model VSR® Pump
(Variable Speed Roto-Jet®)

Capacity:	to 535 gpm (121 m³/hr)
Heads:	to 3930 ft. (1198 m)
Pressures:	to 1730psi (120 Bar)
Temperatures:	to 250° F (121° C)
Maximum Speed:	5400 RPM

Model 2100 Pump

Capacity:	to 465 gpm (106 m³/hr)
Heads:	to 2950 ft. (899m)
Pressures:	to 1300 psi (90 Bar)
Temperatures:	to 250° F (121° C)
Maximum Speed:	4709 RPM

Model 2200 Pump

Capacity:	to 535 gpm (121 m³/hr)
Heads:	to 3930 ft. (1198 m)
Pressures:	to 1750 psi (120 Bar)
Temperatures:	to 250° F (121° C)
Maximum Speed:	5443 RPM

Model RO/ROH Pump

Capacity:	to 450 gpm (102 m³/hr)
Heads:	to 5500 ft. (1676 m)
Pressures:	to 2250 psi (155 Bar)
Temperatures:	to 550° F (288° C)
Maximum Speed:	6321 RPM

Model RO D850 Pump

Capacity:	to 750 gpm (170 m³/hr)
Heads:	to 2100 ft. (640 m)
Pressures:	to 900 psi (62 Bar)
Temperatures:	to 250° F (121° C)
Maximum Speed:	4380 RPM

Model RG Pump

Capacity:	to 400 gpm (91 m³/hr)
Heads:	to 2600 ft. (792 m)
Pressures:	to 1125 psi (77 Bar)
Temperatures:	to 250° F (121° C)
Maximum Speed:	4380 RPM

## Operation

The Roto-Jet® pump is totally, hydraulically stable and can operate with a minimal continuous bypass flow at shutoff indefinitely and at any flow point throughout the total head curve range with no wearing or damaging effect to the pump. The reason for this unique benefit is that all radial forces tend to be balanced within the rotor, and axial thrust is solely a function of suction pressure. Radial and axial forces applied to the Roto-Jet® pump are independent of flow rate. Thus, the pump can operate at design point to shut-off free of shaft deflection or added thrust load applied to the bearings.

Seize-Proof

Unlike conventional centrifugal pumps, the Roto-Jet® pump will not seize if run dry by a loss of suction or if operated with a minimal continuous bypass flow against a closed discharge valve. The mechanical seal is not mounted to the pump drive shaft, therefore, seal failure temperature rise is not transferred to the critical drive shaft/bearing area. The Roto-Jet® pump design does not incorporate wear rings or any close shaft tolerances which would be subject to heat expansion and drive shaft seizure.
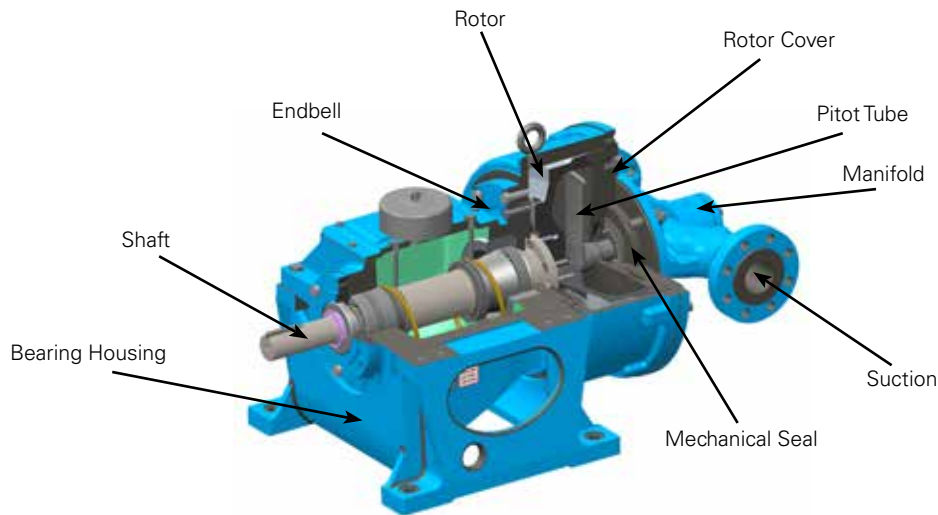
Design Simplicity

The Roto-Jet® pump is a single stage pump with only two basic working parts: a rotating case and a stationary pitot tube.

The mechanical seal of the Roto-Jet® pump is subject to only suction pressure, whereas many other pump seals are exposed to elevated seal chamber pressures producing a potentially higher fail rate. The mechanical seal is isolated from the bearing pedestal, minimizing the risk of bearing contamination from mechanical seal leakage. Therefore the Roto-Jet® pump can be kept in service with a damaged seal to meet the critical demands of daily production.

Performance Flexibility

Any given model is capable of higher or lower pressure performance by simply changing the external pump speed and applying the required horsepower. No modification of the pump is required. A wide range of flow capability is achieved by simply changing the pitot tube.

Applications:

Boiler Feed and Desuperheating	Steel Mills
Oil Production	Hydro-Blast Cleaning
Semi-Conductor Manufacturing	Pulp and Paper Mills
Central Cleaning Systems	Transfer
Mining	Reverse Osmosis
Spraying Systems	Water Injection
Hydraulic Systems	Turbine Fuel Feed
Petroleum-Chemical	NO_x Suppression

WEIR Specialty Pumps

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