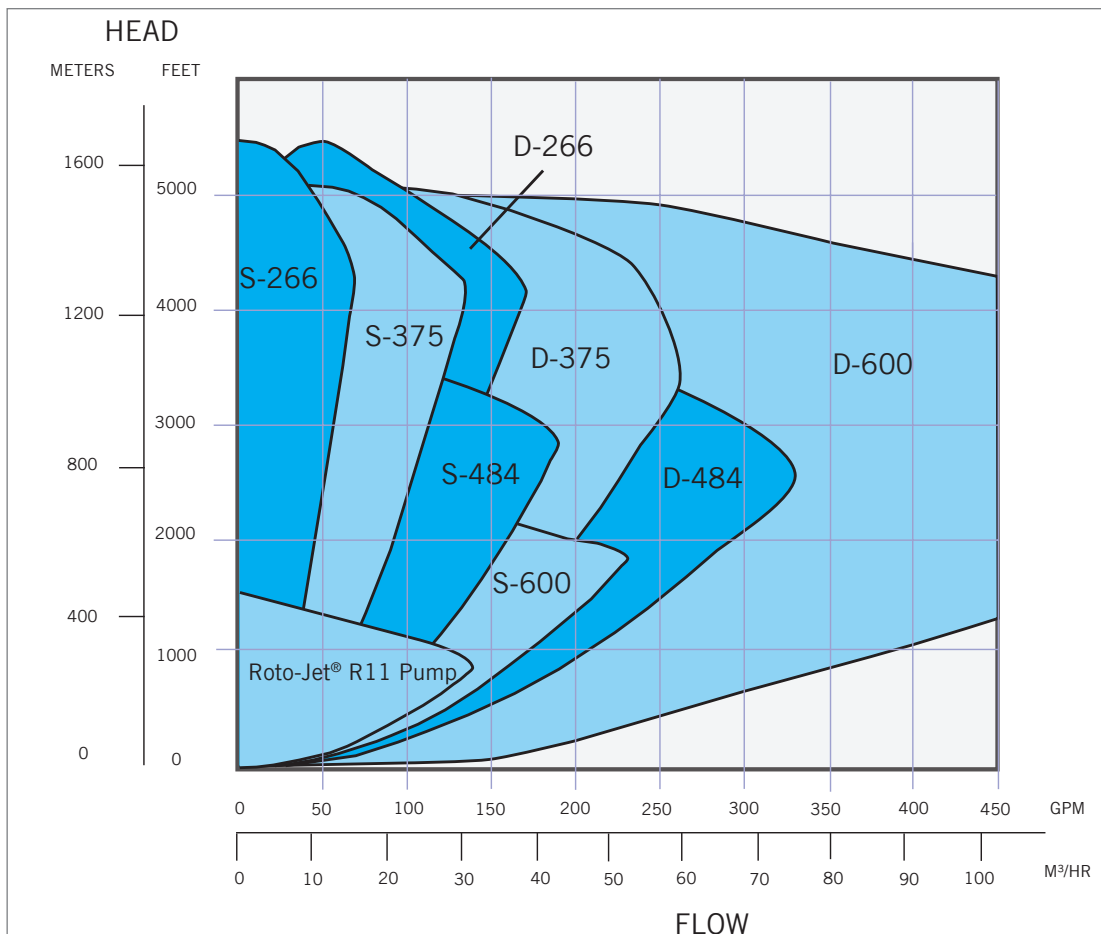


Roto-Jet® Pump Design and Principles of Operation

The Roto-Jet pump has earned a global reputation for reliability and robustness by meeting the demanding requirements of API 610 standards. The operating characteristics of the Roto-Jet pump are simple and similar to a conventional centrifugal pump. Energy is added to the fluid via the rotor and the stationary pitot tube converts the fluid velocity energy into static pressure.

Benefits:

- Pulsation free flow over the entire head-flow curve
- Minimal changes in the radial and axial loads as function of the flow rate
- Bearing L10 life exceeds API 610 standards
- Process seal exposed only to suction pressure which maximizes seal life
- No wear rings
- High-heads achieved in a single stage at low operating speeds compared to other low-flow, high-head pumps
- Isolated drive train to minimize the risk of bearing contamination
- These unique attributes make the Roto-Jet pump an excellent choice for severe low-flow, high-head applications.

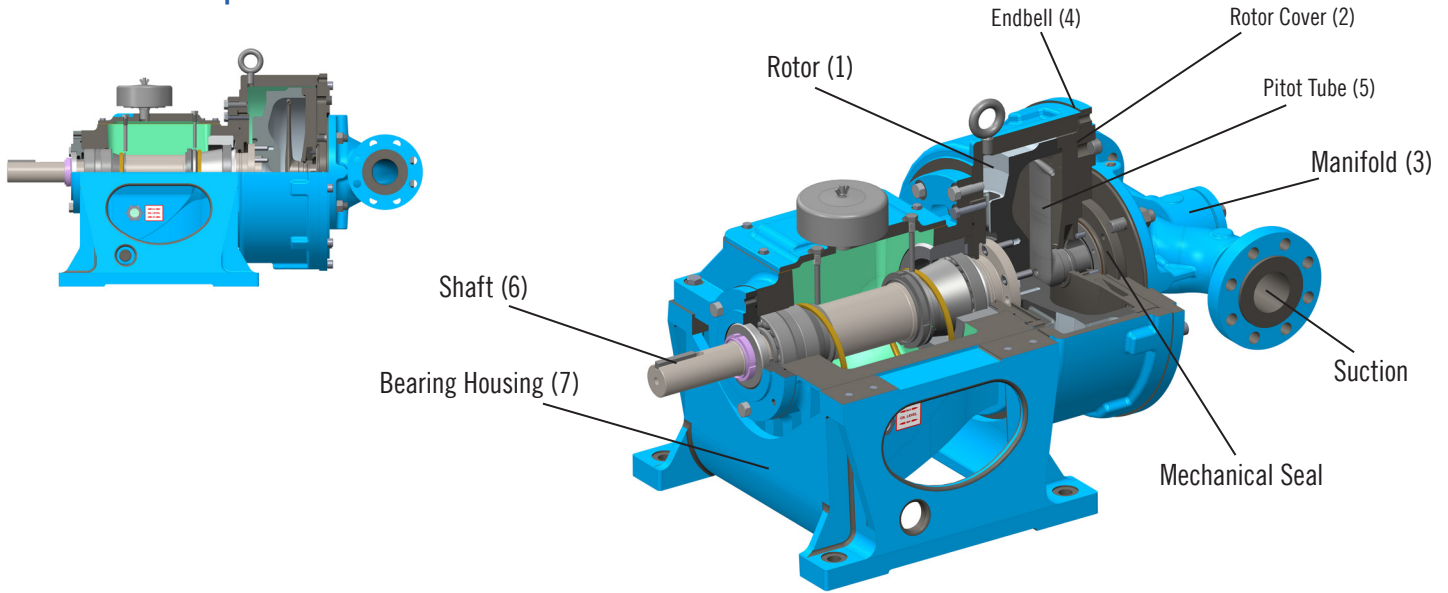


Head/Flow envelope based on 400 HP (300kW) and Specific Gravity = .50

Performance Capabilities

	Model R11 (2 x 1.5)		Model R0		Model ROH	
Maximum flow	150 gpm	34 m ³ /hr	450 gpm	102 m ³ /hr	450 gpm	102 m ³ /hr
Maximum head	1500 ft	460m	2600 ft	790 m	5200 ft	1585 m
Maximum suction pressure	200 psi	14 bar	400 psi	28 bar	300 psi	21 bar
Maximum suction temperature	180° F	82° C	250° F	121° C	250° F	121° C
Maximum suction temperature with flush	250° F	121° C	550° F	288° C	550° F	288° C
Maximum speed	4858 rpm		4380 rpm		6321 rpm	
Maximum power	75 HP	55 kW	400 HP	300 kW	400 HP	300kW

Roto-Jet® RO Pump



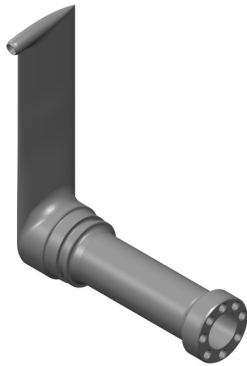
The Roto-Jet high pressure pitot tube pump offers a complete package specifically designed and tested to meet API 610 standards

Options

- Mechanical seal options: single, dual or gas
- API seal flush plans
- Lubrication: splash oil, purge-oil mist, forced
- Noise abatement systems to achieve 80 – 85 dBA
- Baseplate per API 610
- Vibration monitoring per API 670
- Couplings per API 671
- Speed increasing gearbox per API 677
- ASME B16.5 and DIN flanges
- Special metallurgies
- Complete unit and auxiliary testing

Applications

- Condensate and well injection
- Caustics processing
- Amine treating
- Propane transfer
- Reflux
- Transfer
- Boiler feed
- Naptha
- Offshore
- Reactor feed
- Brine disposal



Roto-Jet Pitot Tube Pump

The Roto-Jet pitot tube pump has been specifically designed and manufactured to achieve a broad operating range without creating damaging hydraulic forces in the pump. The pitot tube is stationary in the 12 o'clock position to facilitate venting of the rotor during start-up.

The efficient conversion of velocity energy into static pressure is critical to maximizing any centrifugal pump's efficiency. After years of research and development in conjunction with state-of-the-art CFD tools, Trillium Flow Technologies has created a highly advanced pitot tube geometry designed to offer superior performance for low-flow, high-head pumping services.

Materials of Construction

	S5	S6	S8	C6	A8	D1
1 Rotor	Carbon steel (A216 WCB)			12% CR (CA6NM)	316 AUS (A351 CF3M)	Duplex (A351 CD4MCu)
2 Rotor cover	Carbon steel (A216 WCB)			12% CR (CA6NM)	316 AUS (A351 CF3M)	Duplex (A351 CD4MCu)
3 Manifold	Carbon steel (A216 WCB)			12% CR (CA6NM)	316 AUS (A351 CF3M)	Duplex (A351 CD4MCu)
4 Endbell	Carbon steel (A216 WCB)					
5 Pitot tube	ASTM A747 Grade CBCu-1 or AMS 5383					
6 Shaft (non-wetted)	4140 Steel (A646)					
7 Bearing housing	Carbon steel (A216 WCB)					



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