# ROTO-JET®
## High Pressure Pitot Tube Pumps

Excellent
Engineering
Solutions

WEIR

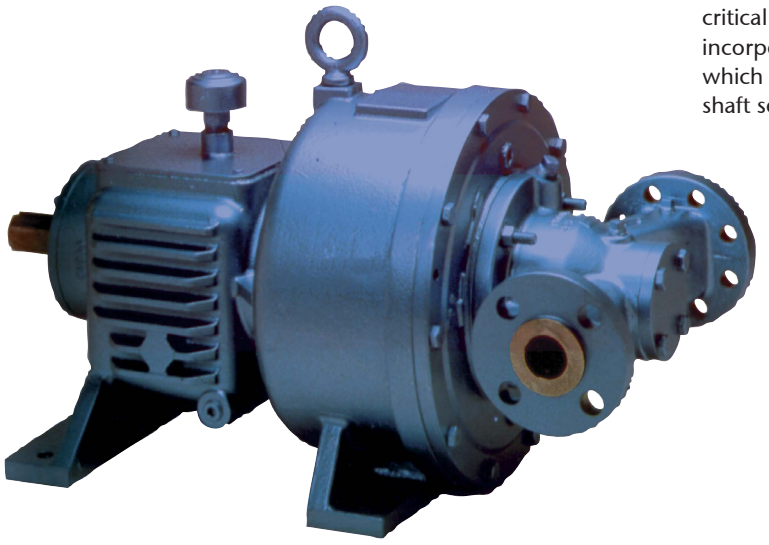
## Model API-R11

**The compact design of the Roto-Jet Pump provides pulsation free pressures up to 650 PSI in only a single stage.**

### Operation

The Roto-Jet model API-R11 pump is totally, hydraulically stable and can operate with a minimal continuous bypass flow at shut-off indefinitely 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 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.

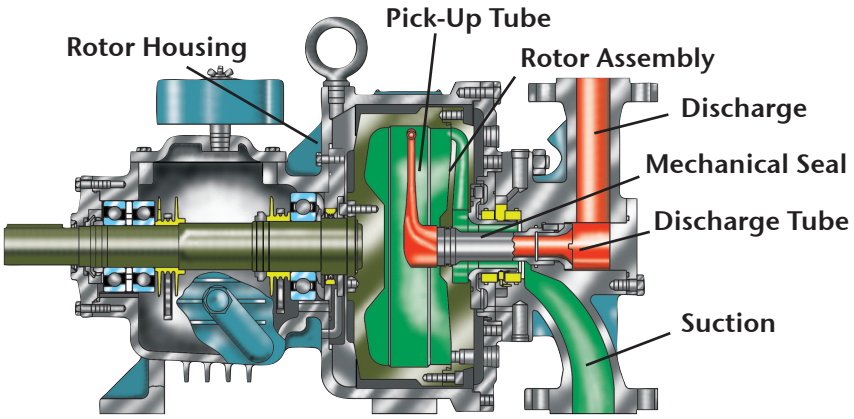


### Design Simplicity

A single stage pump with only two basic working parts; (1) a rotating case and (2) a stationary pitot or intake tube. The pump has only one wearing, rubbing part and that is a mechanical seal that sees only suction pressure. Seal leakage due to seal failure vents to the atmosphere. Seal leakage cannot contaminate the bearing area due to the isolation of the bearing pedestal from the wetted end of the pump. For this reason the R-11 can be kept in service with a damaged seal to meet the critical demands of daily production.

### Seize Proof

Unlike conventional centrifugal pumps the API-R11 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 drive shaft, therefore, seal failure temperature rise is not transferred to the critical drive shaft/bearing area. The design does not incorporate wear rings or any close shaft tolerances which would be subject to heat expansion and drive shaft seizure.




*API-R11 cut-away view*

### Hydraulics

The patented Roto-Jet pump has only two basic working parts, a rotating case and a stationary pick-up tube mounted within the rotating case. Pump performance is adjusted simply by changing the speed of the rotating case and/or by changing the size of the pick-up tube.

### Mechanical

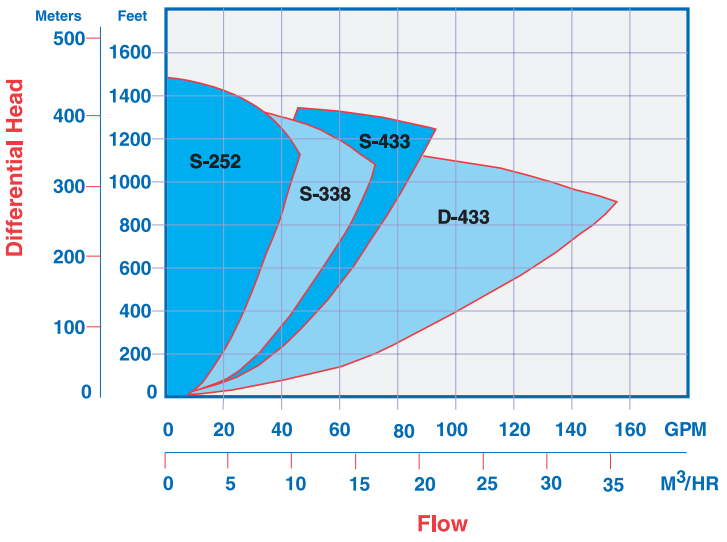
The Roto-Jet API-R11 pump is designed to operate at temperatures up to 250°F (121°C). Its maximum suction pressure is 200 PSI (14 BAR) at a maximum pump speed of 4858 RPM. To maximize pump performance, the API-R11 utilizes oil lubricated bearings.

### Roto-Jet Pump Advantages

The advantages of using the Roto-Jet model API-R11 pump over others is clear. It is simple and rugged in design, containing only two working parts. Its simple and unique design also translates to reduced parts inventory. It is easy to service as all internal parts, including the mechanical seal are readily accessible, thus the mechanical seal is easily maintained and replaced.

The API-R11's compact size allows it to be easily installed in areas where space is an issue. It utilizes oil lubricated bearings which are isolated from the pumped fluid ensuring minimal wear on the mechanical parts. The pump's wide operating range allows it to perform efficiently in many applications providing smooth, pulsation-free flow and constant long term performance.

*Operating Range*




| Specifications | | API-R11 |
|---|---|---|
| Maximum Temperature | 180° F | 82° C |
| (with flush) | 250° F | 121° C |
| Maximum Suction Pressure | 200 PSI | 14 BAR |
| Maximum Head | 1500 Ft. | 457 m |
| Maximum Speed | 4858 RPM | 4858 RPM |
| Maximum Flow | 150 GPM | 34 m3/hr |
| Maximum Horsepower | 75 HP | 55 KW |
| Weight | 380 lbs. | 159 kg |

| Materials of Construction | |
|---|---|
| | **Stainless Steel** |
| Rotor | 316 St. Steel |
| Rotor Cover | 316 St. Steel |
| Manifold | 316 St. Steel |
| Endbell | Ductile Iron |
| Pick-up Tube | 17-4 PH |
| Shaft | AISI 4140 |

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