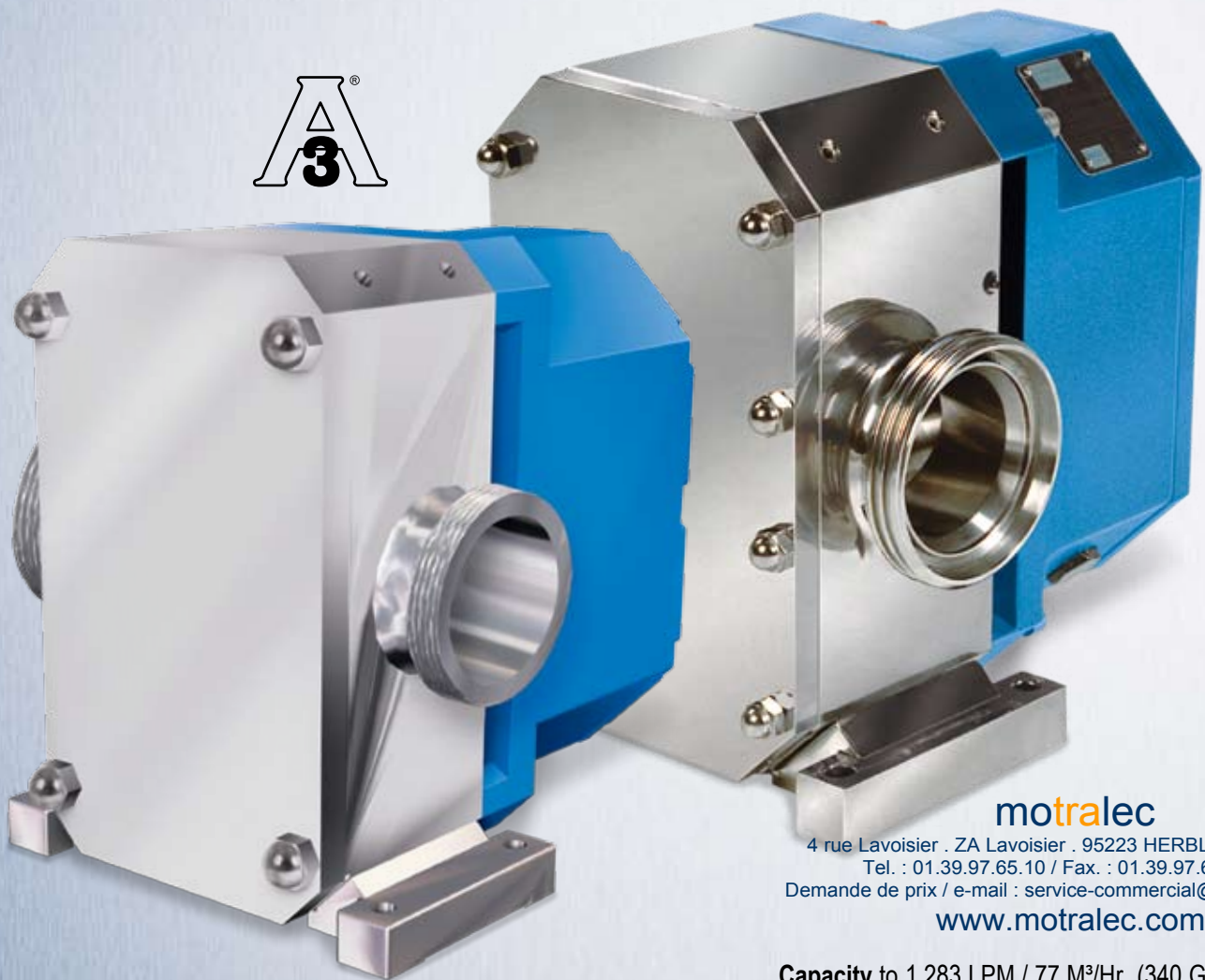


Viking 316L Stainless Steel Rotary Transport Pumps

# VIKING<sup>®</sup>



*High-Speed Rotary Transport Pump  
with Configuration Flexibility and  
Ease of Maintenance*



**motralec**

4 rue Lavoisier . ZA Lavoisier . 95223 HERBLAY CEDEX  
Tel. : 01.39.97.65.10 / Fax. : 01.39.97.68.48  
Demande de prix / e-mail : [service-commercial@motralec.com](mailto:service-commercial@motralec.com)

[www.motralec.com](http://www.motralec.com)

**Capacity** to 1,283 LPM / 77 M<sup>3</sup>/Hr (340 GPM)

**Pressure** to 12 Bar (175 PSI)

**Viscosity** 0.8 to 55,000 cSt (28 to 250,000 SSU)

**Temperature** -15°C to +150°C (+5°F to +300°F)

**Food Grade Rotary Transport Pump  
That Meets 3A Requirements**

**IDEX**  
IDEX CORPORATION

# Viking® RTP Reliability

**Rotary lobe pumps** use timing gears to eliminate contact between the rotors, which allows their use on a wide range of fluid types. As the lobes disengage, they create an increasing volume on the inlet side of the pump. Liquid flows into the cavity and is trapped by the lobes as they rotate. Liquid travels around the interior of the casing in the areas between the lobes and the casing - liquid does not flow between the lobes. As the lobes re-engage, the liquid is forced through the discharge port under pressure.

## The Viking RTP Advantages

Proven design of the RTP series provides higher capacity, higher pressure, and unmatched efficiency on a variety of viscosities enabling faster unloading and loading. This performance along with the RTP series' advanced durability, application flexibility, ease of installation, and ease of maintenance provides a lower total cost of ownership.

### Advanced Durability

The RTP series' corrosion-resistant 316L stainless steel wetted design matches your hygienic or chemical application needs. Precision helical gears, synchronized rotors, and advanced shaft design with optimized bearing position minimizes overhung load which eliminates shaft deflection extending seal and bearing life. This allows more efficient handling of higher viscosity liquids with improved pressure capabilities up to 12 Bar (175 PSI), with high flows for faster unloading.

### Ease of Maintenance

The RTP series' sealed gear box with long-life lubrication eliminates oil inspection and filling, moisture entry points and water build-up, extending the life of the bearings and pump for lower cost of ownership. Its innovative front loading seal design offers efficient strip cleaning, quick inspection, and easy servicing. Simple-to-service design requires no special tools for disassembly and eliminates the need for end-clearance adjustments.

### Application Flexibility

Maximized inlet port area improves pump loading, accommodating a wide range of viscosities. The RTP series' optimized inlet port allows the pump to run 33% faster than competitor's tapered bore inlet configurations. In addition, shallow rotor dwell provides unmatched efficiency facilitating faster and quieter unloading and loading. Universal mounting arrangement allows customer to select ports and shaft orientation without additional costs. RTP series offers additional flexibility with options such as diaphragm-style relief valve, jacketing for heating or cooling, drive/shaft configurations, and numerous seal options to match your specific application needs.

### Lower Cost of Ownership

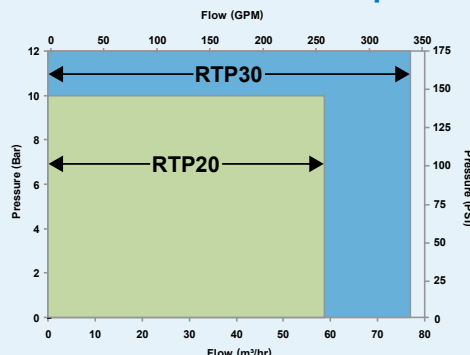
Two pump sizes offer flow rates better matched to your application requirements, lowering initial costs. A robust drive arrangement provides over five times (5x) the torque capabilities of competitor's standard products, allowing you to handle higher viscosity fluids at higher pressures. The sealed gear box with long-life lubrication eliminates traditional service intervals and associated material costs. While its front loading, clean-in-place (CIP) design makes the high costs of manual cleaning a thing of the past. The RTP series' design enables it to be refurbished rather than replaced, for a lower total cost of ownership. Your authorized local Viking RTP Distributor stocks all common parts to better meet service needs.



## RTP Benefits Compared to Other Rotary Transport Pumps:

- Higher displacement/flow:
  - RTP20: 1.00 L/Rev (.264 G/Rev)  
1,000 L/M (264 GPM)
  - RTP30: 1.28 L/Rev (.338 G/Rev)  
1,283 L/M (340 GPM)
- Higher maximum differential pressure:
  - RTP20: 10 BAR (145 PSI)
  - RTP30: 12 BAR (175 PSI)
- Higher RPM operating range:
  - 1000 maximum and/or 600 nominal
- 2 sizes to better match application needs:
  - RTP20: 3" standard/2" optional
  - RTP30: 3" standard/4" optional
  - ACME ports standard, other thread, flange, and clamp styles available
- Bi-rotational pumping capability
- Universal mounting arrangement allows customized orientation of ports and shaft
- Epoxy coated gearbox provides increased durability and cleanliness
- Close-couple to drive hydraulic arrangement for SAE "A" Flange, 2 or 4 bolt motors with:
  - 14 tooth spline shaft adapter standard
  - Other spline and keyed shaft adapters available
- Optional external shaft extension available
- Front loading seal design provides easy access for interchangeable seal systems mounted on universal envelope. Seal options include: O-ring seals; single mechanical; special mechanical; and high pressure lip seals.
- Short-term dry-run capability
- Optional, cover mounted pre-set internal relief valve with PTFE faced diaphragm
- Jacketed rotor case and or front cover available
- Easy to remove rotors do not require end clearance adjustment or shimming
- Fully swept CIP and strip cleanable design meets 3A requirements

## Performance Envelope



## Sanitary Fluids



Viking's RTP pump utilizes the tri-lobe rotor design for food and ultra sanitary/hygienic applications which meet current 3A requirements. It minimizes slip, allowing for relatively high pressures, while providing large voids for gently handling soft solids with minimal damage to suspended particles.

### Typical Applications:

- High fructose corn syrups, sugars, and glucose
- Chocolate
- Edible oils
- Dairy, cream, milk, cheeses, and yogurt
- Shampoo and conditioner

## Chemicals and Solvents



Wide range of seal options with front-loading seals make these pumps ideal for SIP, CIP, or strip cleaning. 316L stainless steel design of the RTP pump series satisfies the corrosion requirements of solvents, chemicals, and caustic sodas in pharmaceutical and chemical manufacturing plants.

### Typical Applications:

- Solvents and base chemicals
- Caustic bases and bulk CIP
- Lubricating products
- Insecticides
- Surfactants

## Resins

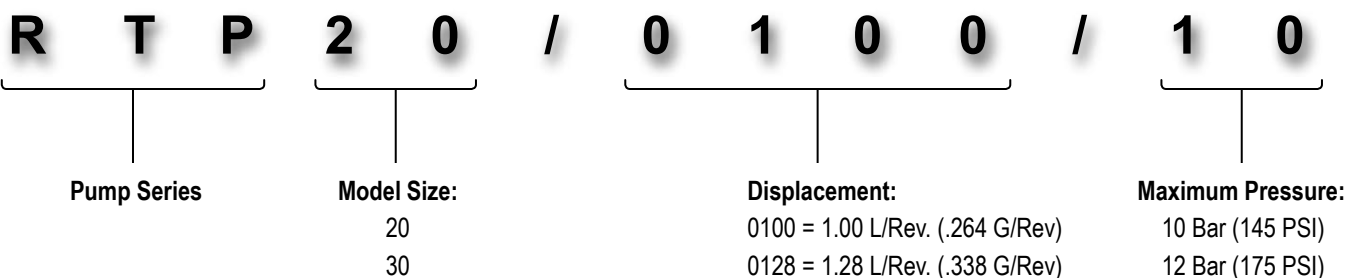


RTP series' non-contacting rotors with long sealing land at tips provide enhanced efficiency on lower viscosity products and minimize pulsation on discharge side. Its front-loading, universal seal envelope design provides superior flexibility for selecting seal options such as O-ring seals, single mechanical, special mechanical, and high pressure lip seals for handling hard to seal liquids. The RTP series is CIP-able and flushes completely clean due to the fully swept pumping chamber, seals behind the rotors, and O-ring sealed rotor retainers.

### Typical Applications:

- Isocyanates
- Foams
- Plastics
- Rubber

## Model Number Key





# Viking® RTP Benefits

## ADVANCED DURABILITY

### ■ Stainless Steel Wetted Design

316L stainless steel wetted parts. **Provides broad sanitary and chemical compatibility while extending pump life, lowering life-cycle costs.**

### ■ Hardened Shaft Sleeve

Tungsten Carbide coated sleeve on stainless steel shaft. **Eliminates shaft wear extending shaft and seal life, for a lower total cost of ownership.**

### ■ Tapered Roller Bearings

Double tapered roller bearings with improved positioning, eliminates shaft deflection. **Provides higher operating speeds and better discharge pressures and extends seal and bearing life.**

### ■ Helical Gear Design

Precision helical gears synchronize rotors. **Provides quieter, smoother operation extending pump life.**

### ■ Drop-in Replacement Design

Drum® drop-in replacement (RTP30 only) capability. **Provides a better pumping solution for faster discharges when handling viscous liquids at higher flows, and higher pressures.**

### ■ Rotatable Casing

Rotatable casing with movable feet allows quick, change-out to vertical or horizontal mounting. **Allows pumps to be mounted with ports and drive shaft in any orientation for enhanced installation flexibility.**

### ■ Compact Design

Compact design conserves valuable space and weight. **Provides more room for easy installation as well as greater payload capacity.**

### ■ Hydraulic Drive Mount

Standard hydraulic drive mount eliminates misalignment problems. **Provides simplified installation and lowers life-cycle costs.**

## EASY INSTALLATION

### ■ Sealed Gear Box

Sealed, long-life lube gearbox eliminates servicing, moisture entry points, and water build-up. **Extends life of the tapered roller bearings and pump for reduced ownership costs.**



### ■ Port Size Options

Straight-through, optimized port design with multiple port sizes. **Provides faster discharges and porting matched for various applications and viscosities.**

- 3" ACME port standard, with 2" port options available (RTP20)
- 3" ACME port standard, with 4" port options available (RTP30)
- Other thread, flange, and clamp style ports available



### ■ Easy Validation of CIP/SIP

Quick release cover plate with wing nut option. **Provides easy access for validation of strip cleaning, clean-in-place (CIP) and sterilize in place (SIP) process.**

### ■ Innovative Front Loading Seal Design

Front loading seal design can be equipped with several different seal types without modification. **Provides enhanced flexibility in pump application.**

### ■ Close Coupled Mounting

2 or 4 bolt SAE "A" flange with key way, 6 or 14 tooth spline, or external shaft mounting for PTO or electric motor drive available. **Provides flexibility for hydraulic or electric drive method to match application need.**

### ■ Shallow Rotor Dwell

Shallow rotor dwell allows faster filling of pump. **Affords faster and quieter cycle times unloading and loading for increased productivity.**

### ■ Tri-lobe Rotor Design

Tri-lobe rotor design gently handles shear-sensitive fluids. **Provides reduced pulsation and higher efficiency for smoother, faster unloading and loading.**

### ■ Pump Jacketing Options

Front cover and or rotor casing are jacketed for heating or cooling to handle temperature sensitive products such as chocolate. **Provides enhanced application flexibility by ensuring liquid integrity during pumping.**

### ■ Tailored Sealing Solutions

Wide range of sealing solutions are available for many liquids in sanitary and chemical applications that may need clean in place (CIP), sterilize in place (SIP) or strip cleaning capabilities. **Minimizes seal maintenance for a better bottom line.**

### ■ In-line Serviceability

In-line servicing requires no special tools for disassembly, reducing the need to remove casing during scheduled maintenance. **Provides reduces scheduled downtime for a lower cost of ownership.**

# Materials of Construction & Specifications

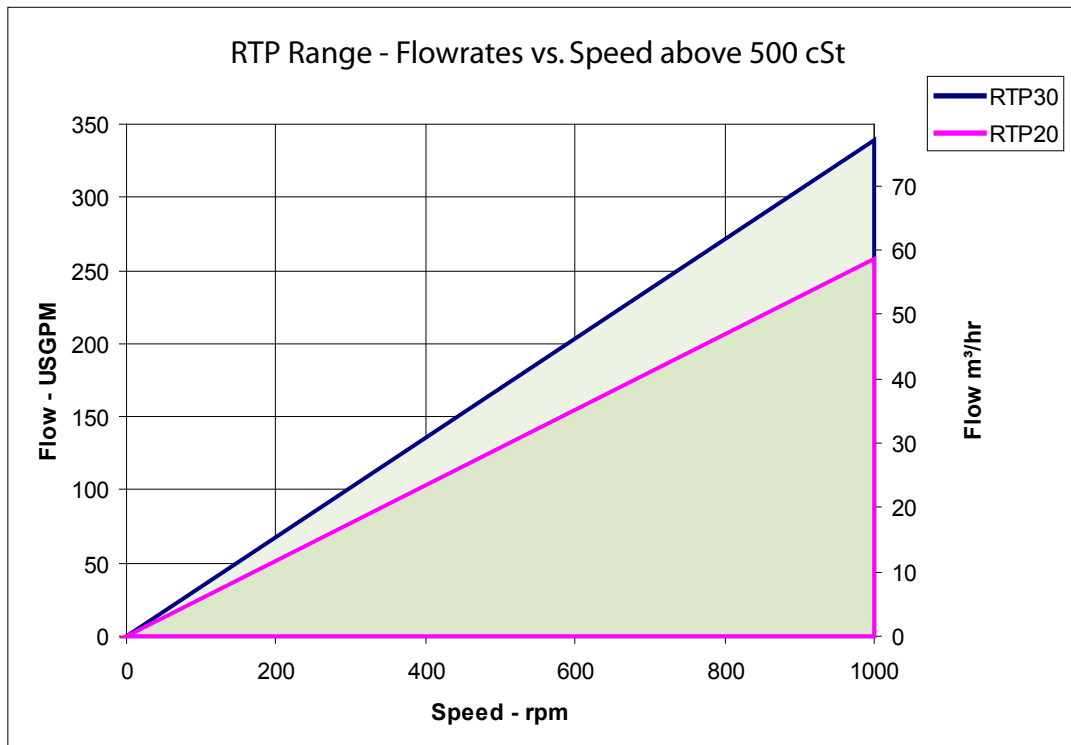
## RTP Series Lobe Pump Construction

Construction	Casing and Head	Rotors	Gearbox Cover	Standard O-ring Seal Elastomers	Mechanical Seals (2 Required)	Front Cover & Rotor Retainer Elastomers	Relief Valve	Mounting Feet
Standard	316L Stainless Steel	316L Stainless Steel Tri-Lobe	Aluminum	EPDM/FDA	Silicon Carbide / Carbon	EPDM/FDA	None	316L Stainless Steel
Optional	N/A	N/A	N/A	Viton <sup>®</sup> , PTFE, PTFE/FDA	Single Mechanical, Special Mechanical, Lip Seals	Viton <sup>®</sup> , Nitrile, PTFE, PTFE/FDA, Kalrez <sup>®</sup>	Diaphragm Style	N/A

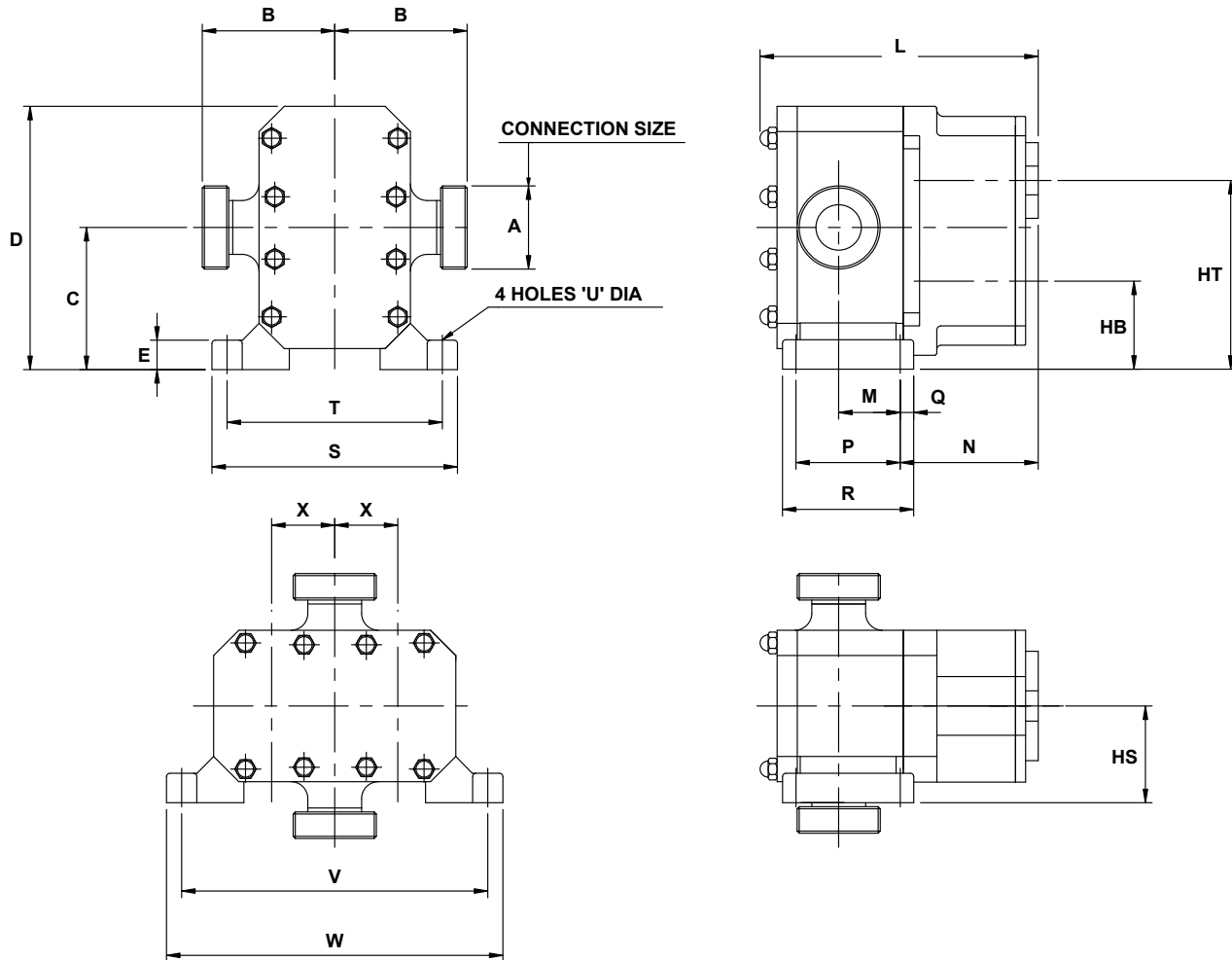
## RTP Series Lobe Pump Specifications

Pump Model	Nominal Connection Size		Theoretical Displacement			Maximum Differential Pressure		Maximum Speed	Maximum Recommended Temperature		Approximate Shipping Weight (Less Valve)	
	mm	in.	Liter/rev	Imp. gal/100 rev	US gal/100 rev	BAR	PSI	rev/min	Deg. C	Deg. F	kg.	lb.
RTP20	50 75	2.0 3.0	1.00	21.9	26.4	10	145	1000	110	230	49	108
RTP30	75 100	3.0 4.0	1.28	28.2	33.8	12	175	1000	150	300	67	148

## RTP20 / RTP30 Performance Curve



## RTP20 and 30 Foundation Dimensions – Basic Pump (Hydraulic Drive)



Model		A	B1	B2	B3	B4	B5	C	D	E	HB	HS	HT	L	M	N	P	Q	R	S	T	U	V	W	X
RTP20	mm	50	139	131	131	139	142	275	22	88	88	196	299	42	174	90	14	117	222	195	11	303	330	54	
		80	149	139	144	144	142	275	22	88	88	196	299	42	174	90	14	117	222	195	11	303	330	54	
	in.	2.0	5.47	5.16	5.16	5.47	5.59	10.83	0.87	3.46	3.46	7.72	11.77	1.65	6.85	3.54	0.55	4.61	8.74	7.68	0.43	11.93	12.99	2.13	
		3.0	5.87	5.47	5.67	5.67	5.59	10.83	0.87	3.46	3.46	7.72	11.77	1.65	6.85	3.54	0.55	4.61	8.74	7.68	0.43	11.93	12.99	2.13	
RTP30	mm	80	163	145	153	158	157	305	29	97	100	217	311	62	161	124	14	152	243	214	13	329	358	60	
		100	178	145	153	158	157	305	29	97	100	217	311	62	161	124	14	152	243	214	13	329	358	60	
	in.	3.0	6.42	5.71	6.02	6.22	6.18	12.01	1.14	3.82	3.94	8.54	12.24	2.44	6.34	4.88	0.55	5.98	9.57	8.43	0.51	12.95	14.09	2.36	
		4.0	7.01	5.71	6.02	6.22	6.18	12.01	1.14	3.82	3.94	8.54	12.24	2.44	6.34	4.88	0.55	5.98	9.57	8.43	0.51	12.95	14.09	2.36	

**B1** applies for all threaded connections (including ACME & Triclamp) except BSPT and NPT.

**B2** applies for BSPT and NPT thread connections.

**B3** applies for all flange connections except ASA150, BS4504 and ASA300.

**B4** applies for ASA150 and BS4504 flange connections.

**B5** applies for ASA300 flange connections.

These dimensions are for guidance only – Certified drawings are available on request.



# Worldwide Leader Since 1911 for Positive Displacement Pumping Solutions for Industrial, OEM, and Sanitary Applications.

## Innovation and Experience

Viking Pump has been a pump industry leader and innovator since its founding in 1911. We continue to build on our ever growing experience delivering innovative new pumping solutions, including custom designs, to many thousands of customers who use millions of Viking® pumps in some of the world's toughest applications.

## Broad Performance Range

**Capacity:**

0.5 to 360 M<sup>3</sup>/Hr (0.1 to 1600 GPM )

**Pressure:**

0 to 172 Bar (0 to 2500 PSI)

**Temperature:**

-40°C to 370°C (-40°F to 700°F)

**Viscosity:**

0.5 to 1,000,000 cSt (28 to 4,500,000 SSU)

## Ultimate in Sealing Solutions

Viking's offering of packing, component mechanical seals, cartridge seals, and sealless Mag Drive technology provides the best choices for sealing flexibility needed to provide your application a customized sealing solution every time - saving you money, time, and unplanned downtime.

## Material Options Matched to Application

Viking's dedicated iron and alloys foundries provide pump construction materials from cast iron to Hastelloy®. Application-specific materials of construction extend pump life significantly, while reducing maintenance and unplanned downtime, which enables increased production and a better bottom line.

## Liquid Integrity Protection

Viking has developed multiple positive displacement pump principles to protect shear-sensitive liquids, and low-shear options to prevent damage to fibers, polymers, and solids. Full-jacketing options provide precise temperature control throughout the pump. The Viking Mag Drive® and other seal options prevent fluid contact with air, assuring liquid integrity.

## Local Applications and Engineering Support

Over 245 Authorized Viking Pump Distributors in 68 countries provide local application support and service, backed by Viking Application Engineers and Viking Region Managers strategically located around the world.

## Quality Manufacturing

Viking uses ISO9001-2000, ISO14001, Six-Sigma, and Lean/Kaizen in its worldwide manufacturing and assembly processes to remove waste, reduce development costs, and deliver superior products on schedule. Dedicated Viking foundries and manufacturing facilities utilize state-of-the-art CNC equipment to assure unmatched quality is built into every pump. Viking products also meet the applicable standards or certification requirements for ATEX, CE, DIN, EHEDG, BSP, JIS, ANSI, UL, NSF, 3-A and others.

## Custom Designed Solutions

Viking has provided custom designed pumps to end-users and OEMs since its first pump in 1911, when Viking invented the gear-within-a-gear pumping principle to remove water from a rock quarry. Today, enabled by Viking's engineering staff, extensive applications experience, and in-house foundries, more than 20% of Viking's sales are new Viking designs, or pumps designs derived from more than 1000 Viking catalog pumps with more than 40,000 active configurations. So, whether you are an end-user or an OEM, Viking can provide custom designed pumping solutions to meet your specific needs.



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