

# IDEX Viking Pump # 1209

- Industry: Chocolate
- Product: Internal Gear Pump
- Value Proposition: the unique variations of the pumps and seals have been created over many decades to ensure that chocolate product quality is maintained during transfer while at the same time creating the lowest true cost of this process
- *Viking Pump is a Hub Participant joining in the effort to help purchasers make the best True Cost Decisions*

# Value Proposition

Based on many decades of experience Viking addresses each of the cost factors affecting chocolate pumping and has developed special pumps to provide the best value proposition for each process variation. The CHC1 models are especially suitable for chocolate, cocoa masses and creams.

The CHC2 models are used for low-viscosity media such as cocoa butter, oils and lecithins. Both models are characterized by freedom from leaks with a double O-ring seal, integrated heating jacket, flushing lines and holes on the follower to ensure better flushing and to prevent heat build-up and caramelization on the bearings.

Viking is the leader in pumping chocolate and has achieved this position by continuing development to meet the industry challenges.

## THE VIKING PUMP ADVANTAGE

- EC1935 Compliant constructions
- Internal O-rings create a sealed lubrication chamber for the bracket bushing, increasing bushing life
- Trusted and proven with world leading chocolate manufacturers
- Pre-defined chocolate pump constructions to make business easy
- Low shear design protects delicate chocolate suspensions
- Hardened materials provide long life on abrasive liquors and chocolates
- Internal gear principle handles viscosities ranging from thin cocoa butter to thick peanut butter
- Simple, in-house maintenance
- Vertically integrated manufacturing process, from raw materials to finished product, meets ISO 9001:2015 quality standards

Viking Pump has been a trusted partner in reliability with chocolate and confectionery processors around the world for more than a century. As the world's leading positive displacement process pump manufacturer, solving difficult liquid transfer problems is what we do. And it doesn't get more difficult than chocolate, so you can rely on Viking's experience and expertise.

Viking has worked closely with processors to overcome the many difficulties of pumping chocolate and developed hundreds of different, unique pump designs for each different chocolate liquid. For example:

- Hardened parts to minimize wear by abrasive cocoa liquor
- Extra clearances and drilled idler gears to prevent caramelization of white chocolate
- Grooves to promote flow behind the rotor to prevent solids buildup on sugar-free chocolate
- Special seals for cocoa butter and fats

Viking Pump identifies the cost factors:

- Slow and complicated pump startups
- Abrasive products wearing away at the pump internals
- Product buildup within the pump
- Leaky pumps leave product all over the floor leading to slip hazards and costly clean up

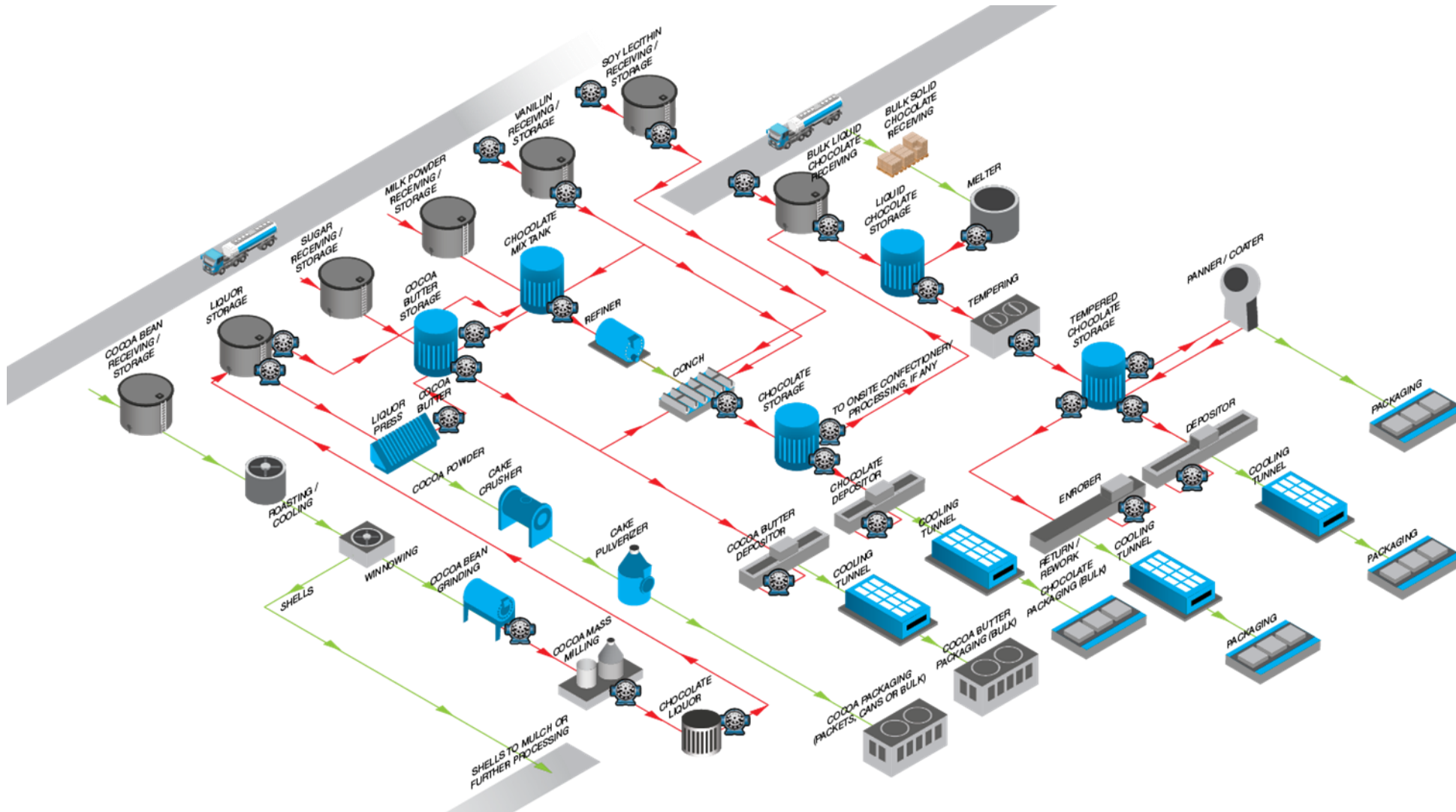
Positive displacement pumps have been the reliable solution to the challenges that the chocolate industry faces.

**Viking has worked closely with processors to overcome the many difficulties of pumping chocolate and developed solutions for each unique chocolate liquid.**

- Hardened parts to minimize wear by abrasive cocoa liquor
- Extra clearances and drilled idler gears to prevent caramelization of white chocolate
- Grooves to promote flow behind the rotor to prevent solids buildup on sugar-free chocolate
- Special seals for cocoa butter and fats
- Jacketed for smoother startups
- Cast iron and stainless-steel material options

Whether the task is to transfer cocoa mass from a ball mill across the plant to a blending tank, or to recirculate yogurt coating in a closed loop to feed a series of panners, or to continuously recirculate tempered milk chocolate from an enrobing machine's sump to the feed trough, or a hundred other possibilities, Viking's gentle, reliable pumps will improve your operational efficiency

The many process and variables addressed by Viking Pumps are shown in the following interactive process diagram



<https://www.vikingpump.com/chocolate>  
To view interactive process diagram

## One superiority factor is the immunization of leakage

Packing was designed to leak

But it doesn't have to be that -

With Viking Pump's patented **O-Pro® Sealing Technology**, you keep your product where it belongs; Inside the pump and off your floors. We listened to our customers and engineered a seal that reduces loss of product due to leakage.

Each O-Pro® Seal design option replaces packing or a mechanical seal by occupying the internal bracket cavity with a machined seal gland. Utilizing O-rings to seal externally on the bracket and internally on the shaft, a combination of O-rings and lubricating grease provide a **robust seal**. This prevents process fluids from leaking out of the pump.

The O-Pro® Cartridge seal allows for an easy retrofit while addressing any need for stainless steel seal construction.



Viking's internal gear pumps can be used in almost all areas of chocolate production. To further increase the service life of the pumps and to ensure that the chocolate is conveyed even more gently, Viking has developed two special types of pumps. The CHC1 models are especially suitable for chocolate, cocoa masses and creams.

The CHC2 models are used for low-viscosity media such as cocoa butter, oils and lecithins. Both models are characterized by freedom from leaks with a double O-ring seal, integrated heating jacket, flushing lines and holes on the follower to ensure better flushing and to prevent heat build-up and caramelization on the bearings.

## RELIABILITY

1224A-CHC1 models for chocolate liquids minimize frictional heat at bushings and prevent solids buildup that can cause seizing. The O-Pro™ Barrier Seal is lubricated with clean food-grade grease instead of chocolate and keeps chocolate out of the bracket while providing superior shaft support; the extra-clearance idler gear and bushing are drilled to ensure flow between the bushing and pin to reduce heat; and flush and suckback grooves on the casing create flow behind the rotor to eliminate buildup. High-strength steel or ductile iron rotors handle high viscosities, and hardened iron bushings and hardened steel shafts minimize wear. There's no packing to adjust, which eliminates common overtightening problems.

**LESS PUMP & PART VARIATION** The 1224A-CHC2 models for non-chocolate liquids are identical to CHC1, except the casing does not have flush and suckback grooves, for higher efficiency on thin liquids like cocoa butter. This reduces pump and spare part variation and enables easy conversion from CHC1 to CHC2 and vice versa. Seal kits enable low-cost conversion of existing Viking Universal Seal pumps to the O-Pro™ Barrier Seal.

## **SIMPLE MAINTENANCE**

O-rings are replaceable with the pump in-place, when configured with spacer couplings allow space to remove the O-Pro™ Barrier Seal. Jack screws in seal kits allow easy O-Pro™ Barrier Seal removal. Proven O-ring sealing technology means low-cost seal replacement. Recommended re-greasing interval is every 500 hours of operation.

## **FOOD SAFETY - EC1935 COMPLIANT**

The pumps are constructed of food grade materials and carry the EC1935 mark to limit leaching of harmful substances into food and are suitable for use on low hazard foods like chocolate, according to your HACCP plan.