Votator® LD Series

SCRAPED SURFACE HEAT EXCHANGERS
MULTI-FLEXIBLE CONFIGURATION FOR ROBUST AND EFFICIENT HEAT TRANSFER

Waukesha Cherry-Burrell®
The competitive challenges in the dairy, food, beverage and cosmetics industries are constantly increasing. Manufacturers require optimum performance, quality and flexibility at the lowest possible cost in order to respond to current and future production requirements.

Finding the right heat transfer solution requires experience and careful assessment of application and quality requirements such as energy efficiency, space constraints, availability (uptime), installation, product related requirements and flexibility.

Increasing competition and tight margins require low operating costs, quick payback and short return on investment (ROI).

As one of the largest producers of Scraped Surface Heat Exchangers (SSHE’s) in the Food & Beverage segment, SPX FLOW understands the technical and commercial needs when it comes to heat transfer solutions for medium to high-viscosity products.

**LD SERIES – ALL IN ONE**

Based on a multi-flexible platform, the Votator® LD series is designed to operate under harsh conditions where other heat exchanger technologies can fail or cannot sustain operational efficiency over a longer period.

Designed to heat or cool medium and high viscous products with or without particles under sanitary conditions, the Votator® LD series comes in two basic configurations:

**HORIZONTAL**

- Rigid stainless steel frame
- Easily extended up to 6 cylinders

**VERTICAL**

- Rotatable cylinder for easy maintenance
- Low space requirements

Made in the USA and the EU, the Votator® LD series offers robust reliability and performance along with easy access for maintenance, and fast and effective cleaning (CIP/SIP).

**INDUSTRIES**

- Dairy
- Fats & Oils
- Processed Foods
- Fine-foods
- Fruit preparation
- General food applications
- Cosmetics
- Industrial applications

**APPLICATIONS**

- Heating
- Cooling
- Crystallization
- Pasteurization
- Sterilization

**PRODUCTS**

- Medium to high viscosity
- Products with particles
- Thixotropic products
- Heat sensitive products
Robust Technology, Materials and Design

The Votator® LD series is designed specifically for hygienic processing of medium and high viscous products. Its modular design enables flexible adaptation to the process needs.

Floating scrapers in a staggered configuration, three optional rotor diameters, a choice of three scraper blade materials, and a duplex steel option enable process customization for a large variety of applications.

The Votator® LD series complies with EHEDG approved and 3-A design and fabrication standards.

HEATING/COOLING MEDIA

Depending on the application and available utilities the Votator® LD series offers a choice of media including:

• Steam
• Hot water
• Glycol
• Brine
• Cold water

GENERAL USE

The Votator® LD series is designed for use at 14 to 302°F (-10 to 150°C) with a design pressure of up to 209 psi (20 bar) in the standard version and comes optional in a 362 psi (25 bar) version.

Materials used enable utilization of acidic or corrosive media. The flow-design creates a low pressure drop and enables processing of products with particles and solids.

Typical Product Applications

Dairy
• Cream Cheese
• Milk Concentrates
• Processed Cheese
• Quark
• Baby Food

Bakery
• Chocolate Products
• Custards
• Light fat sugar cremes

Fats & Oils
• Remelt of margarine
• Shortening

Fruit & Vegetable Preparation
• Jam / Marmalade
• Fruit pulps
• Vegetable purré

Fine Foods
• Starch Cooking
• Ketchup
• Dressings
• Mayonnaise

Convenience Food
• Salsa
• Soups
• Sauces

Cosmetics
• Facial cremes
• Hair wax
• Gels

Industrial Applications
• Oil
Customized to Your Specific Needs

The Votator® LD series can be customized depending on the product, production volume, hygienic requirements, space constraints and the heating/cooling medium.

**STANDARD HIGH-FLEXIBILITY MEDIUM VISCOSITY UNIT**

- 290 psi (20 bar) product pressure - high standard pressure rating for higher flexibility
- Product wetted parts in EN 1.4404 / AISI 316L
- Rotor diameter: 4” (99 mm)
- Scraper blades material: PEEK®/PTFE - with Teflon® to reduce friction and wear
- 50 Hz / 400V motor: 4 hp (3 kW) / 278 rpm / 76 ft*lb (103 Nm)
  60 Hz / 460V motor: 3 hp (2.2 kW) / 213 rpm / 73 ft*lb (99 Nm)
- Two single mechanical shaft seal
  - for high hygienic demands
  - increased run-time and shorter CIP-time - higher production output
  - in cartridge design for fast and easy maintenance
  - with widely available SIC/SIC sealing surfaces from the SPX FLOW shelf
  - EPDM gaskets

**CUSTOMIZATION OPTIONS**

- Product wetted parts in duplex steel (EN 1.4462 / SAF 2205) for:
  - 362 psi (25 bar) option
  - acidic products
  - abrasive products
- Rotor diameter: 4.4” (112 mm) for:
  - better heat transfer
  - shorter contact time with heating surface - less heat exposure to product
  - shorter holding/heating time - less exposure to product
  - less holding volume - less waste product
- Rotor diameter: 2.84” (72 mm) for:
  - larger particles
  - less pressure drop - smaller pumps
- Scraper blade material: reinforced PEEK® for higher viscous products
- 50 Hz / 400V motor: 3 hp (2.2 kW) / 176 rpm / 88 ft-lb (119 Nm)
  - 5.4 hp (4 kW) / 142 rpm / 199 ft-lb (270 Nm)
  60 Hz / 460V motor: 4 hp (3 kW) / 328 rpm / 64 ft-lb (87 Nm)
  - 5 hp (3.7 kW) / 181 rpm / 144 ft-lb (195 Nm)
- Heated rotor
  - to avoid product build-up when cooling crystallizing products
  - retro fit available
- Two flushable double mechanical seals
  - for aseptic design (use with i.e. aseptic fluids or steam)
  - for use with solidifying or abrasive product particles i.e. sugar (with water flush)
  - single mechanical seals can easily be upgraded
- Clip-on insulation
  - for easy mounting/dismounting
- Gasket material: FPM
## TECHNICAL DATA

<table>
<thead>
<tr>
<th>Product volume - 2.84&quot;/(72 mm) shaft</th>
<th>Media pipe In / out</th>
<th>MEDIA:</th>
<th>HEIGHT X LENGTH X WIDTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat exchange surface / cyl. ft² (m²)</td>
<td>MEDIA:</td>
<td>Working pressure</td>
<td>Media pipe In / out</td>
</tr>
<tr>
<td>Vertical version 61.4&quot; x 29.5&quot; x 24.5&quot; (1,560 mm x 750 mm x 620 mm)</td>
<td>1.5&quot; 150# RF flange (48.6 mm)</td>
<td>-4 to 338°F (-20 to 170°C)</td>
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<td>Horizontal version 1 cyl. 47&quot; x 33.5&quot; x 29&quot; (1,189 mm x 851 mm x 735 mm)</td>
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Global Service and Support

SPX FLOW has a finely meshed network of locations and offices all over the world. Our experienced local specialists work to quickly address our customers’ specific applications and business needs. This ensures optimum performance and reliability of your SPX FLOW equipment regarding cost control, productivity, reliability, waste and energy management, and regulatory compliance.

APPLICATION TESTING
You can arrange for application testing on rented SPX FLOW equipment on your own premises. Alternatively you can leverage the entire range of SPX FLOW expertise and equipment at one of our Innovation Centers.

Experienced SPX FLOW R&D engineers and product specialists are ready to assist you to determine the right configuration for your equipment, whether the goal is to develop new products or improve an existing application.

INSTALLATION AND COMMISSIONING
Skilled local SPX FLOW engineers ensure rapid installation and commissioning of your new SPX FLOW equipment.

TRAINING
Local SPX FLOW specialists are available to train your workforce in operation and maintenance to ensure you derive maximum benefit from your SPX FLOW equipment.

ORIGINAL SPARE PARTS
The wear parts used in the Votator® LD series are widely available SPX FLOW standard parts. These can be ordered to comply with your scheduled maintenance planning in order to minimize downtime.

RAPID RESPONSE
SPX FLOW experts are ready to respond at short notice if a problem arises requiring immediate assistance.

MAINTENANCE AGREEMENT
A maintenance agreement with SPX FLOW ensures scheduled maintenance by a local SPX FLOW specialist to minimize downtime and give you peace of mind.