Asphalt Terminals & Refineries

Screw pumps and systems

- ↗ Vacuum tower bottoms
- ↗ Coker charge
- ↗ Asphaltenes
- ↗ Loading/Unloading
- ↗ Transfer

Screw pumps in asphalt terminals

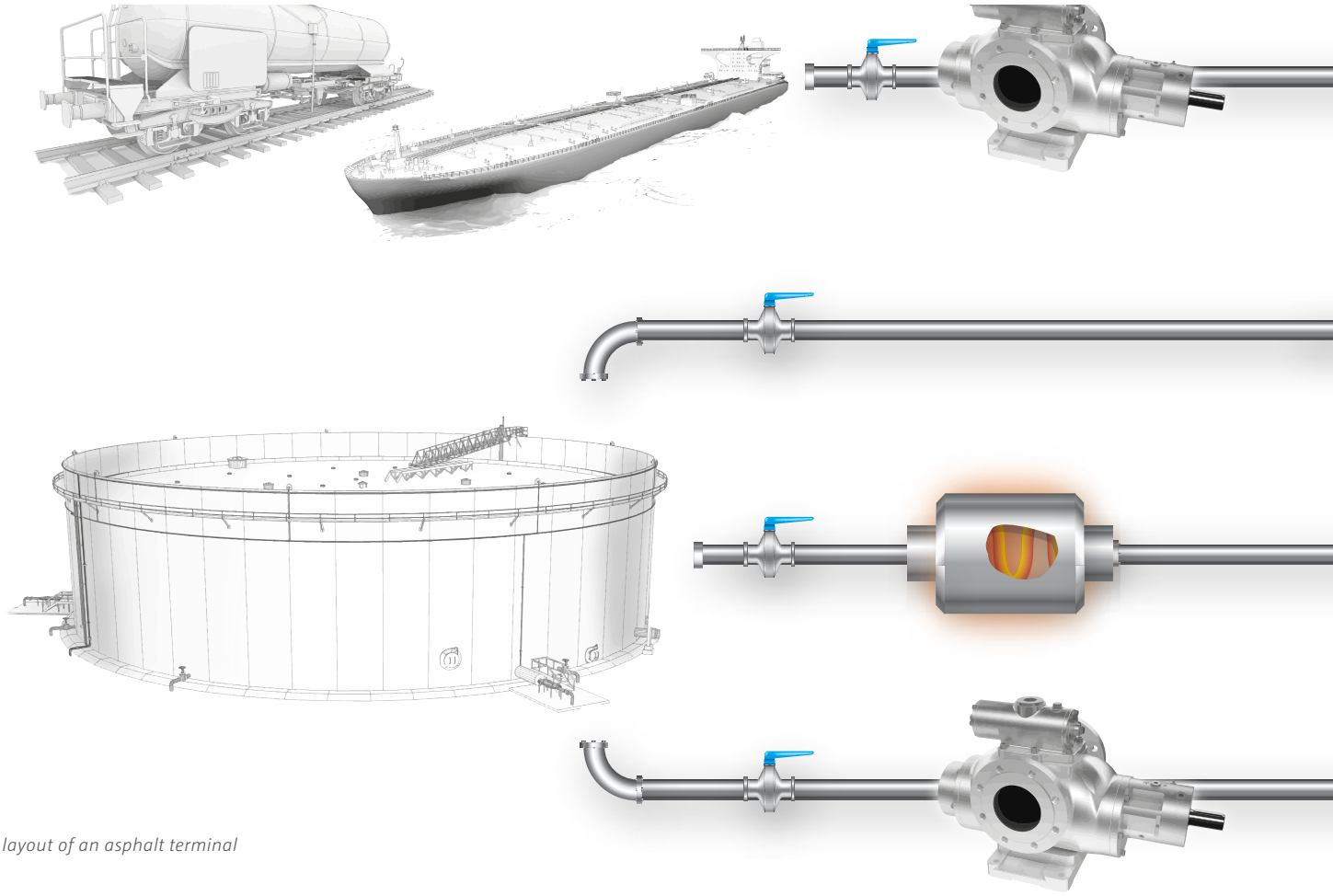
Application

Above-ground tank concepts at storage terminals are the basis of a reliable and cost-efficient distribution process. The characteristics of asphalt and related products require pumps that are designed to efficiently transfer and circulate the fluids, often with very challenging operating conditions.

The typical pumping scenario requires pumps to handle fluids with high temperature, high viscosity during cold start, entrainment of air and gas in the pump flow, solids and impurities and slugs of cold product. This in combination with a continuous and reliable operation together with the demand for low energy and maintenance costs, limits the choice of pump technology for the operator.

Leistritz screw pumps provide an optimum solution. They are used at asphalt terminals to move product between carriers and storage tanks. In comparison to other types of pumps, their exceptional suction capability allows faster **unloading/transfer** of asphalt.

» Leistritz pumps move asphalt instead of heating it.



Schematic layout of an asphalt terminal

CIRCULATION *LOADING*

↗ LESS MAINTENANCE due to balanced rotor set

↗ ENERGY SAVING

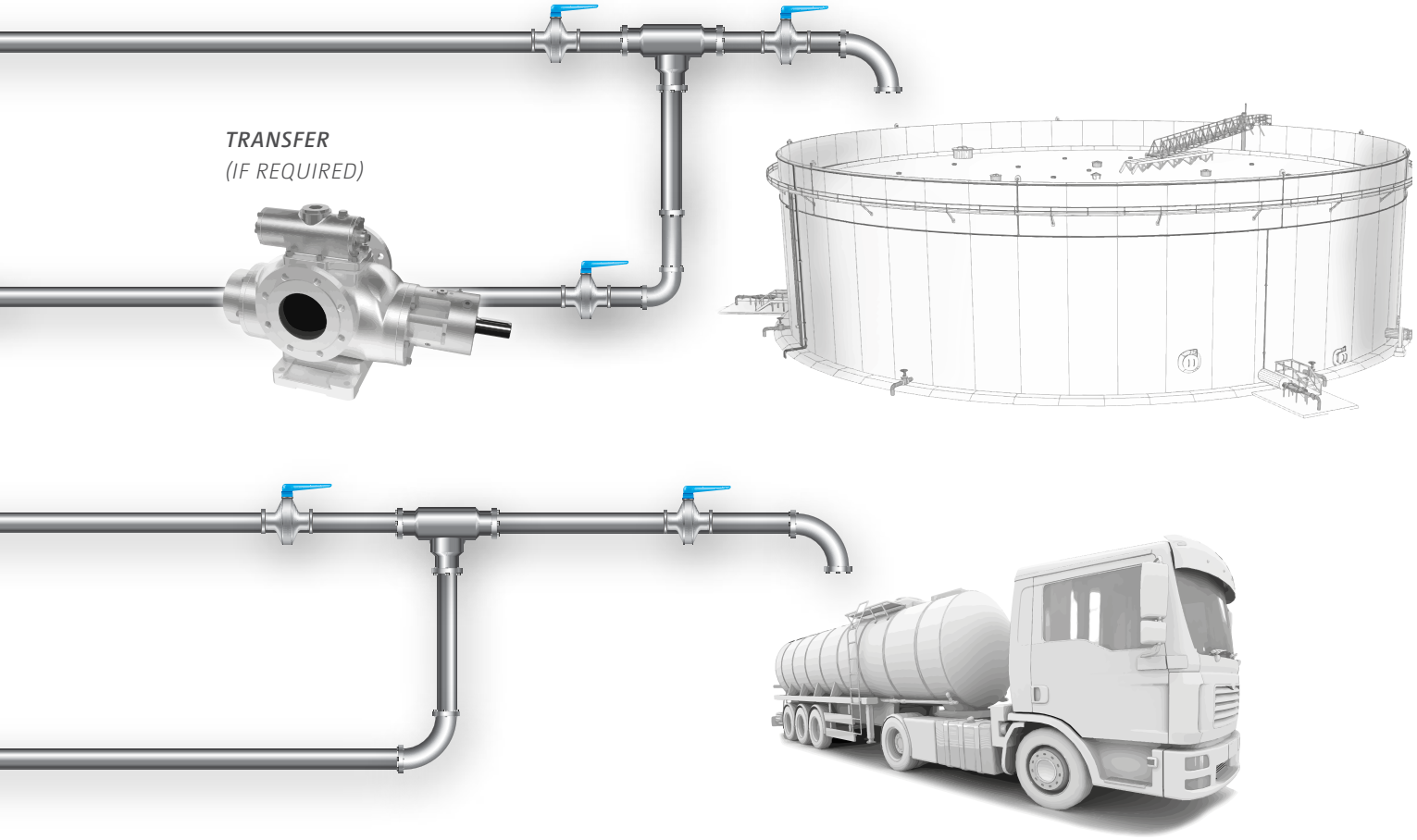
Leistritz screw pumps handle 250°F product temperature (Typical: 270 – 325°F)

↗ QUIET, PULSATION-FREE OPERATION RESISTANT

plugs are easily pumped out

↗ EXCELLENT suction lift characteristics

Example of a Leistritz L2 screw pump



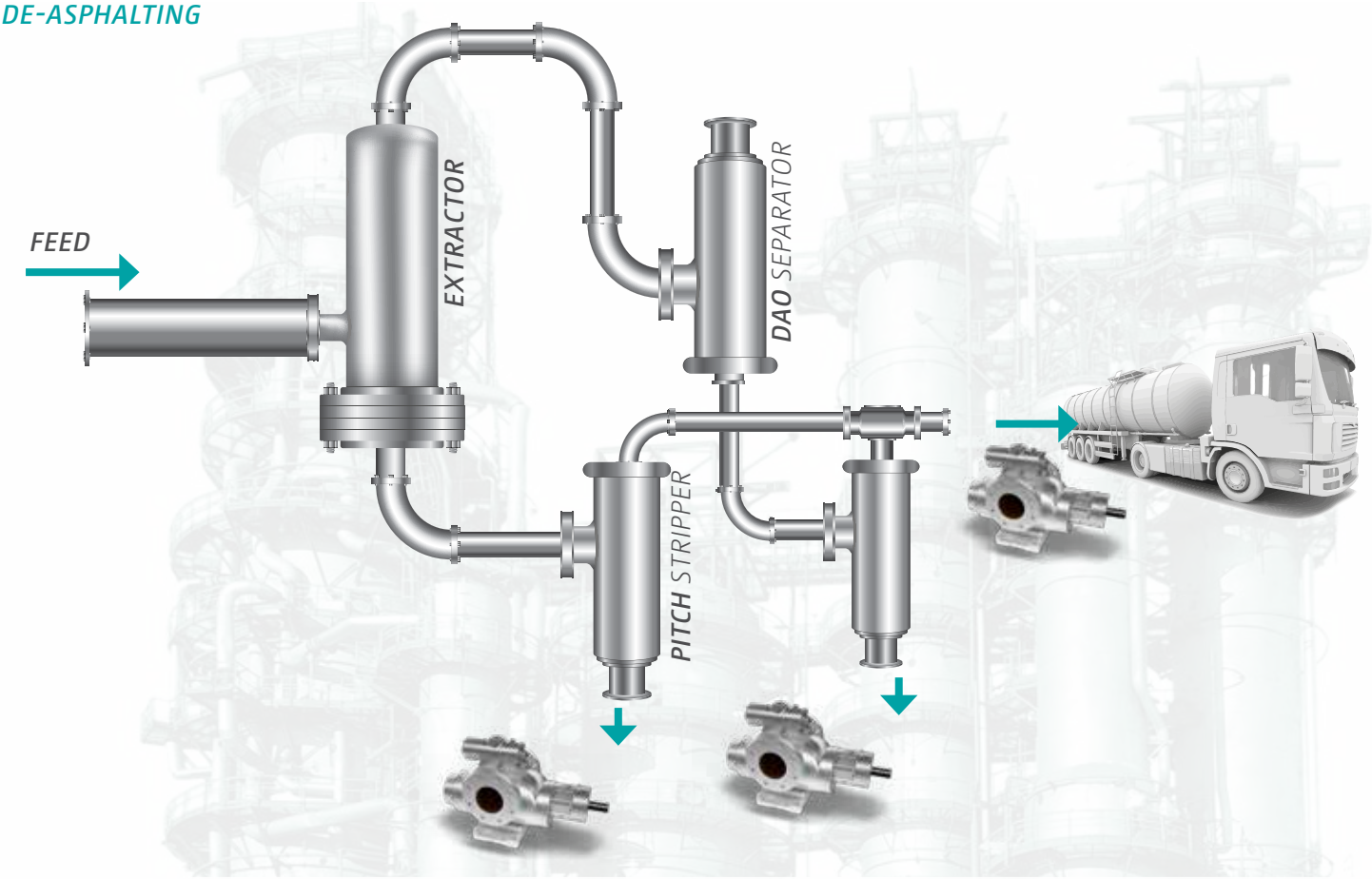
SCREW PUMPS IN REFINERIES

The unprocessed crude oil has to be refined into consumable petroleum products. Due to their tolerance of high viscosity and temperature as well as their ability to handle vapors and light hydrocarbons Leistritz screw pumps are used in refinery application for:

- ↗ Coker charge
- ↗ Bottoms/Residues
- ↗ Asphaltenes

Pumping in upstream distillation system
The refinery gets its crude from either pipelines or marine vessels. The crude is transferred from the terminal to the refinery storage tanks or into the atmospheric distillation towers. To process the heavier residuals from the atmospheric distillation, a vacuum distillation unit can be used. This runs at a slight vacuum in order to lower the boiling points and to allow the refinery to produce more of the valuable products such as gasoline, jet fuel and diesel. Pumps are used to transfer the vacuum tower bottoms (residues) for further processing.

DE-ASPHALTING



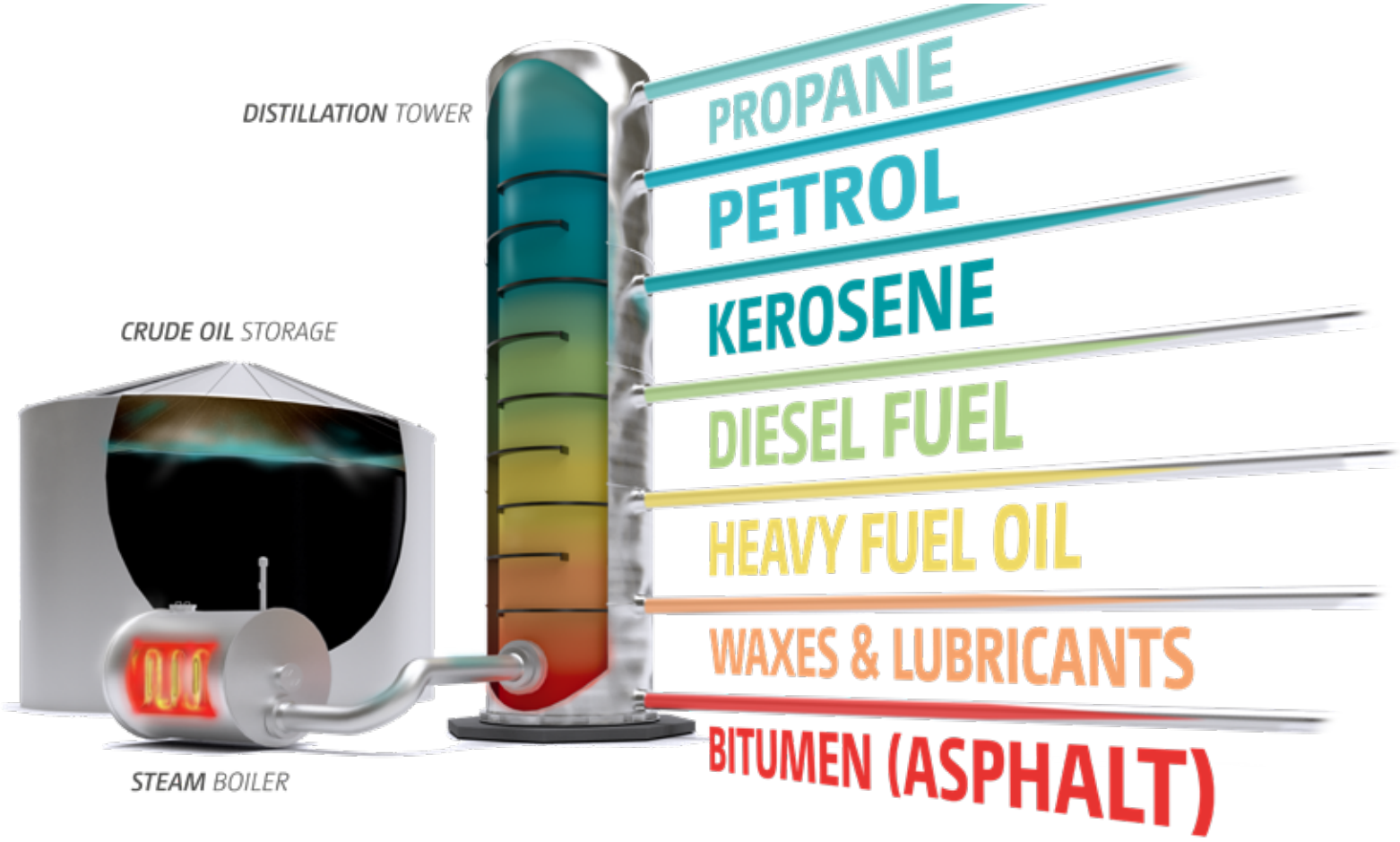
PUMPING IN DE-ASPHALTING SYSTEM

Light crude oils are becoming more and more expensive, environmental regulation is increasingly being tightened and the further processing of refinery residues is time-consuming and cost-intensive. All of these reasons lead refinery operators to opt for an in-house de-asphalting system. With this process refinery residues are processed almost completely into de-asphalted oil and bitumen.

BITUMEN PRODUCTION

During distillation, crude oil is heated to temperatures beween 575 and 650°F in order to separate the low-boiling point components from the non-boiling ones under atmospheric pressure. These lighter fractions are then removed and processed separately. What remains is atmospheric residuum. In order to ensure the complete removal of light fractions without thermal alteration of the molecular structure, the atmospheric residue is then transferred to vacuum distillation. At reduced pressure, the boiling points of the components drop and bitumen remains. The thickness and quality of the bitumen can be determined by pressure and temperature.

DISTILLATION COLUMN



LEISTRITZ ***PUMP SOLUTIONS***

CUT YOUR MAINTENANCE COSTS!

The pumps operate under cold conditions without breaking gear teeth or shafts. By design, the pump's internal porting and screw profile handle slugs of cold asphalt without damaging the rotating elements. The integral relief valve lets operators manually re-circulate the asphalt internally. This allows for pumping cold slugs from the piping while eliminating the potential for broken shafts caused by over-pressurization.

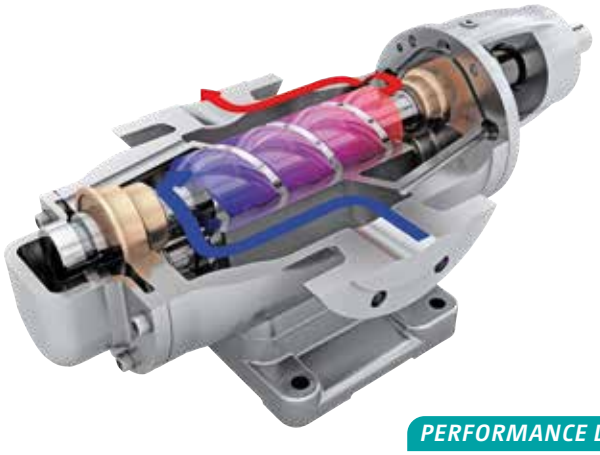
CUT YOUR OPERATING COSTS!

The unique design and power suction capability of the Leistritz screw pumps pumps asphalt at temperatures as low as 250°F, which is at least 20°F lower than other pumps. The result is less energy consumption, faster material handling, greater efficiency – all resulting in **enormous cost savings**.

Installation of L2 pumps for railcar unloading

Example of a L3MG pump in use

L2NG SCREW PUMP

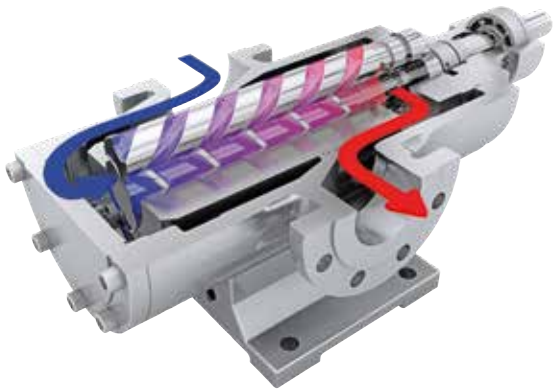


Leistritz screw pumps in the L2 series are self-priming, positive displacement pumps for a pressure range of up to 250 psi, suitable for transporting light abrasive and corrosive, highly or low viscous fluids with poor or good lubricity.

PERFORMANCE DATA

Flow rate:	0 Up To 2,000 GPM	5,000
Differential pressure:	0 Up To 250 psi	250
Viscosity:	0 Up To 20,000 cSt	150,000
Pumping temperature:	0 Up To 545°F	600

L3MG SCREW PUMP



Leistritz screw pumps in the L3 series are triple screw, single seal, self-priming, positive displacement pumps for almost any pressure duty, suitable for transport of non abrasive lubricating fluids.

PERFORMANCE DATA

Flow rate:	0 Up To 1,600 GPM	5,000
Differential pressure:	0 Up To 2,300 psi	2,300
Viscosity:	0 Up To 5,000 cSt	150,000
Pumping temperature:	0 Up To 360°F	500

Get in touch today!

Leistritz Advanced Technical Corp.
(201) 934-8262
info@leistritzcorp.com