

Leistritz

P I P E L I N E A P P L I C A T I O N S



**MODERN HEAVY CRUDE
OIL PUMPING**

In the modern era of crude oil production and transportation, pipeline operators must have the capability and flexibility to move both light and heavy crude oils. Leistritz three- screw and twin-screw pumps are a proven solution that meets these pumping challenges with cost efficiency and versatility.

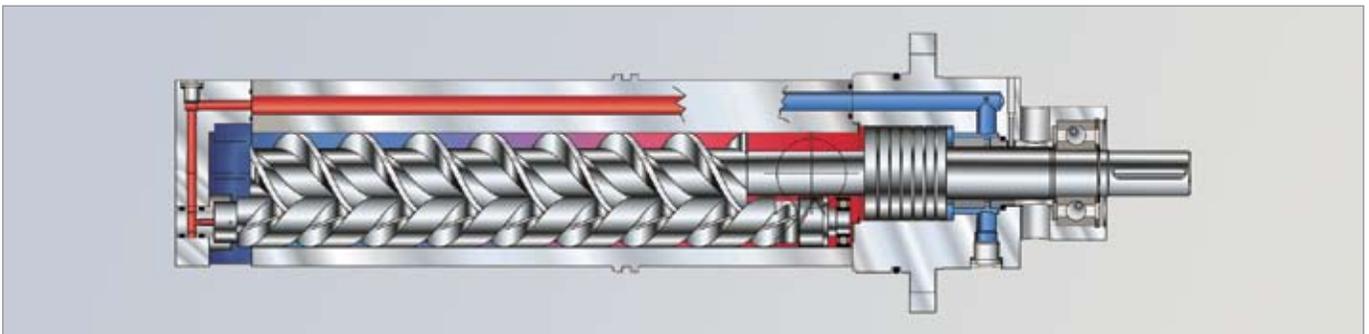
Screw pumps are self-priming, positive displacement pumps that are ruggedly designed with few moving parts, deliver uninterrupted flow and efficiently handle low and high viscosity crude oils. As the viscosities increase, the efficiency of a screw pump will outperform any rotodynamic pump.



Leistritz screw pumps are hydraulically balanced and move liquid from suction to discharge as if it were being pumped by a piston with an infinite stroke. The low pulsation characteristics of screw pumps also eliminate the need for pulsation dampeners.

Screw pumps have the ability to handle high viscosity fluids at low temperatures and reduce the use of expensive diluents, minimizing overall cost of operation.

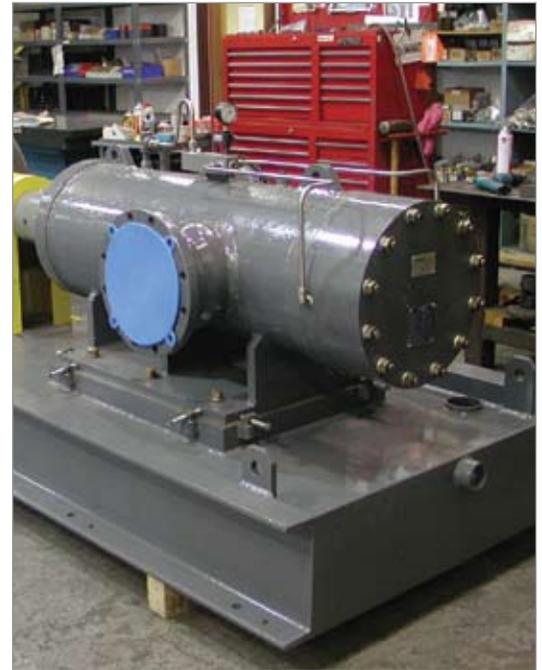
L3



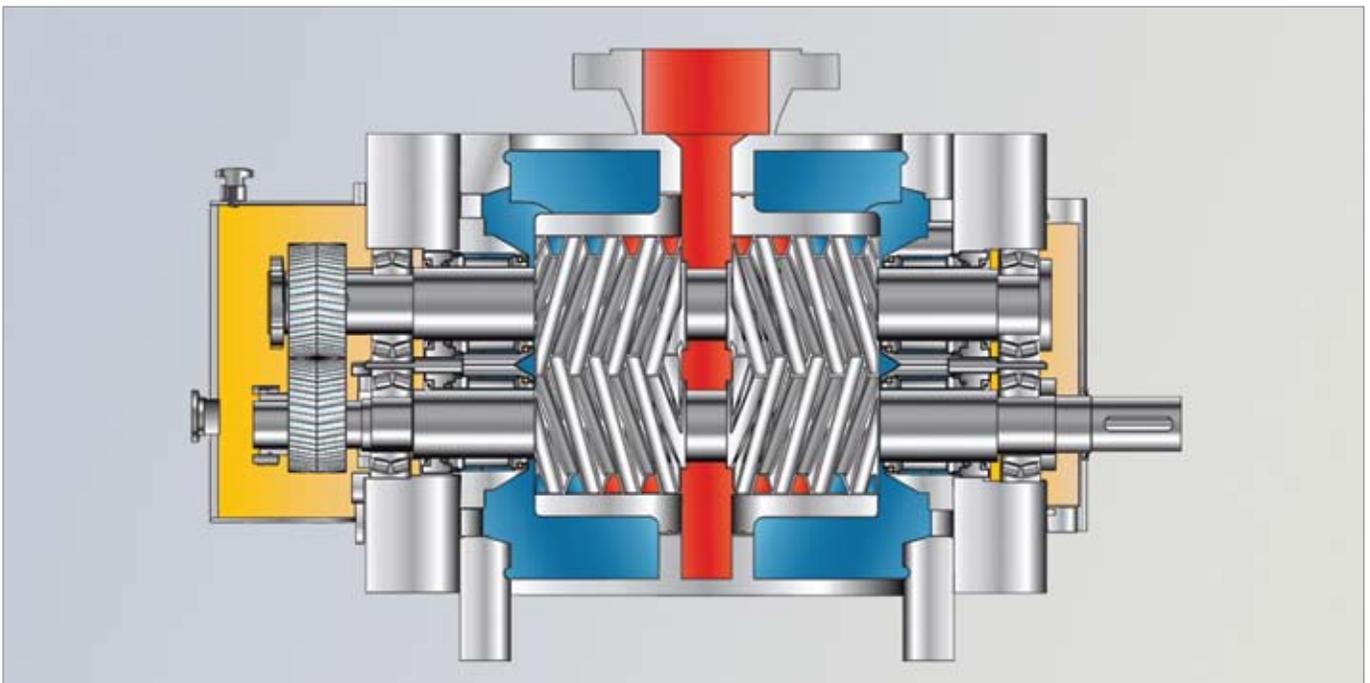
Flow: up to 40,000 bpd
Differential Pressure: up to 2300 psi

Screw pumps used in pipeline applications are of two types: twin-screw pumps which are used predominantly at pipeline boosting stations and terminals, and three-screw pumps to boost pressure from laterals to the main pipeline. Both are self-priming, positive displacement pumps that are built for high efficiency and long-term, trouble-free performance. Both share design features that are important to the pump's performance and durability:

- Deep nitrided rotors that minimize wear and abrasion,
- Replaceable liner (L4) or cartridge (L3) design, each with optional coating methods for added wear prevention,
- Precision machining and proprietary design features to maximize speed and efficiency while lowering power consumption,
- Split bearing/seal housing for servicing seals without disturbing pipe connections,
- Various mechanical seal options,
- Fabricated casings that simplify mounting and piping configuration.



L4



Flow: up to 440,000 bpd
Differential Pressure: up to 1600 psi

In Canada – HEAVY OIL BOOSTING

Two Leistriz twin-screw pumps move heavy crude oil from a gathering facility to an upgrader through a 30km pipeline. Each pump has a flow capability of 135,700 bpd, differential pressures up to 1,305 psi, with a maximum temperature rating of 302°F.

Twin-screw pumps were selected for their ability to move high viscosity crude oil and for the screw pump's unique ability to maintain flow even if the back pressure increases. The positive displacement pump also can free up oil plugs formed when the oil cools down. This capability is of particular importance given the harsh winter conditions of northern Canada.



In California – INCREASED AVAILABILITY

Two Leistriz three-screw pumps move crude oil from storage tanks through a custody transfer unit for an oil major in California. These units each have a flow rate of 31,030 bpd and differential pressures up to 600 psi.

The three-screw pumps replaced existing reciprocating pumps, thus eliminating pulsation issues and providing the operator with a more efficient and versatile pump. The simplistic screw pump design significantly improved pump availability over the more complicated, maintenance intensive reciprocating pumps.



For more information about our Pipeline Pumps, or for complete descriptions of other Leistriz screw pumps, call us directly, or visit www.leistrizcorp.com/pumps.

Leistriz

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