Bulk (Raw) Asphalt

APPLICATION DOCUMENT

Bulk (raw) asphalt is produced through the distillation of crude oil. It is produced in millions of gallons at a time and then shipped to an asphalt-refining plant via barge or unit train. When it reaches the refinery, it must be unloaded for storage into holding tanks and then transferred into the facility, from which it emerges as asphalt as a finished product ready, most commonly, for road paving or as a weatherproof sealant on roofs.

The main challenge in handling bulk (raw) asphalt is the high volumes of material that need to be loaded onto barges and railcars and then unloaded off of them into holding tanks at the refinery. In high-volume applications like this, utilizing a pump technology that can reach and maintain prescribed flow rates while handling a highly viscous product that must be kept at an elevated temperature is imperative. The unloading process must also be as efficient as possible so the transport vessels are not "out of service" for too long. The pumps must be able to perform line-stripping duties so that no product "heel" is left in the barge or railcar at the completion of the unloading process.

Positive displacement (PD) sliding vane pumps excel in high-volume handling of bulk (raw) asphalt because they are able to be outfitted with a heating jacket that will keep the raw asphalt at the desired temperature, while their self-adjusting vanes allow them to handle high-viscosity, particulate-laden liquids at high flow rates and at varying pumping pressures.

HXL

For the handling of bulk (raw) asphalt, Blackmer recommends its HXL Series Pumps, which are part of the Heavy Duty Line. HXL pumps, are available with 6-, 8- and 10-inch ANSI-flanged port sizes that can produce flow rates from 755 to 2,220 gpm (171 to 504 m^3/h), which makes them perfect for use in the high-volume transfer of bulk raw asphalt. The pumps can be outfitted with a heating jacket (the HXLJ model) that maintains the temperature required to keep the asphalt in a liquid state. They are constructed of ASTM 536 ductile iron and fitted with replaceable casing, liners and end discs that allow easy rebuilding of the pump without needing to be removed from the piping. The use of bronze-faced mechanical seals will keep the asphalt from sticking to the seal face, which can lead to costly damage. The HXL pumps are also capable of performing line-stripping duties, while an optional bolt-on relief valve (available for all sizes) will protect the pump from excessive pumping pressures.

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HXL

BLACKMER SOLUTIONS

- HXL Series Sliding Vane Pumps
  - HXLJ

COMPETITION

- **Gear Pumps**

Gear pumps are not self-adjusting, making it hard for the technology to maintain volumetric consistencies when handling high-viscosity materials like asphalt at varying pressures.

- **Other Sliding Vane Pumps**

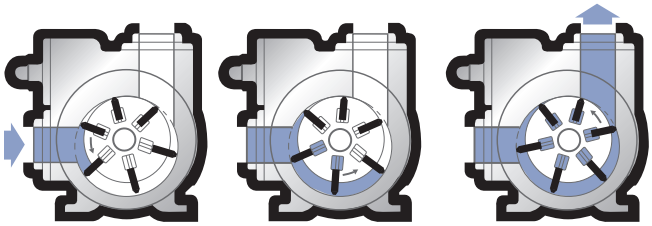
Competitive models have a difficult time achieving and maintaining the high flow rates needed for the transfer of bulk raw asphalt. In fact, one brand can only achieve the flow rate of an 8-inch HXL model with its 10-inch pump.

GLOSSARY

Mean Time Between Maintenance (MTBM) – The average length of operating time between one maintenance action and another maintenance action for an industrial system or component.

Heel – The varying amount of liquid left in a storage tank or transport vehicle after it has been unloaded; eliminating the heel requires a pump technology that has strong line-stripping and suction-lift capabilities.

HOW BLACKMER SLIDING VANE ACTION WORKS



For more information on these additional solutions, visit us at blackmer.com.

Where Innovation Flows

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