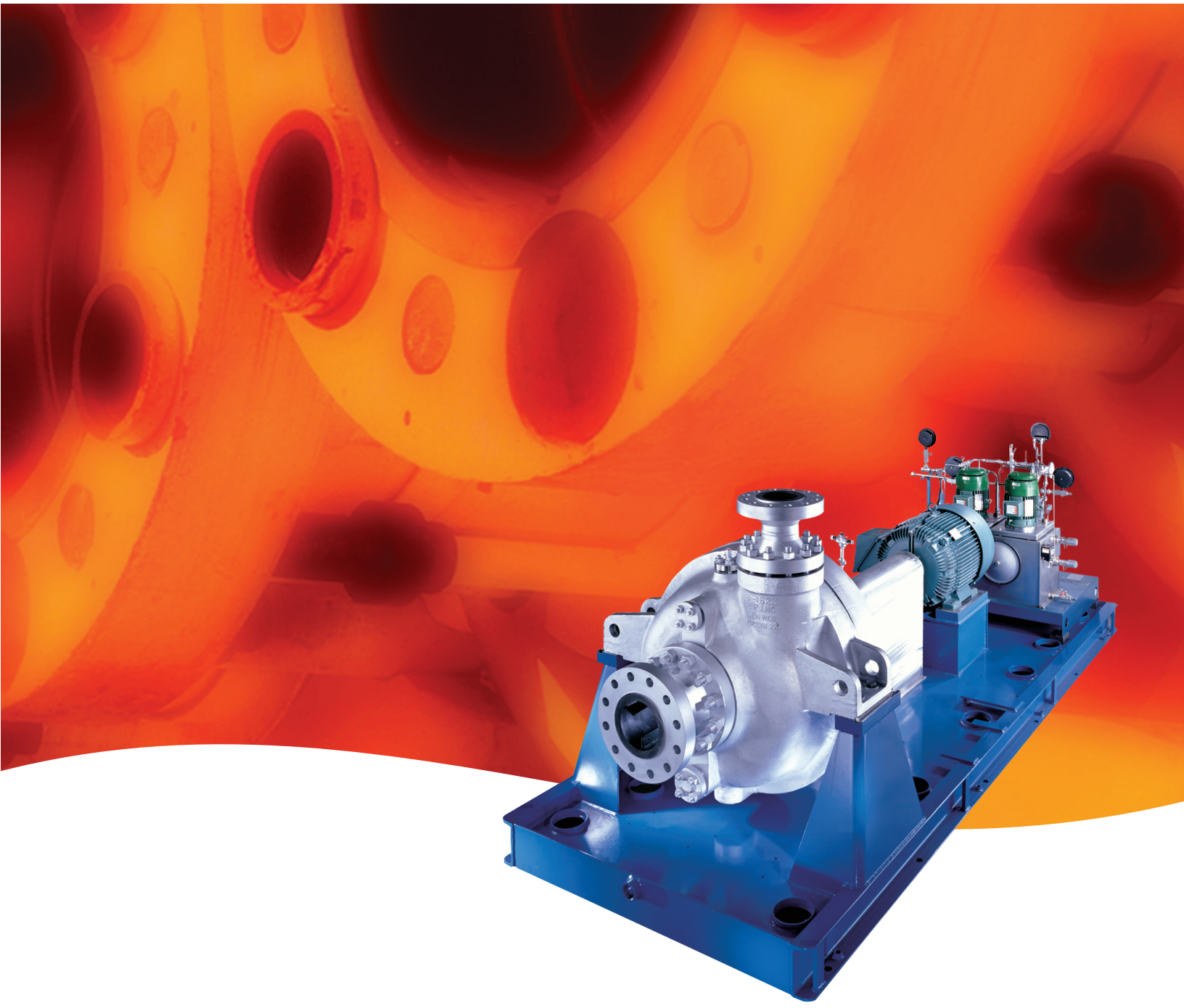
FLOWSERVE

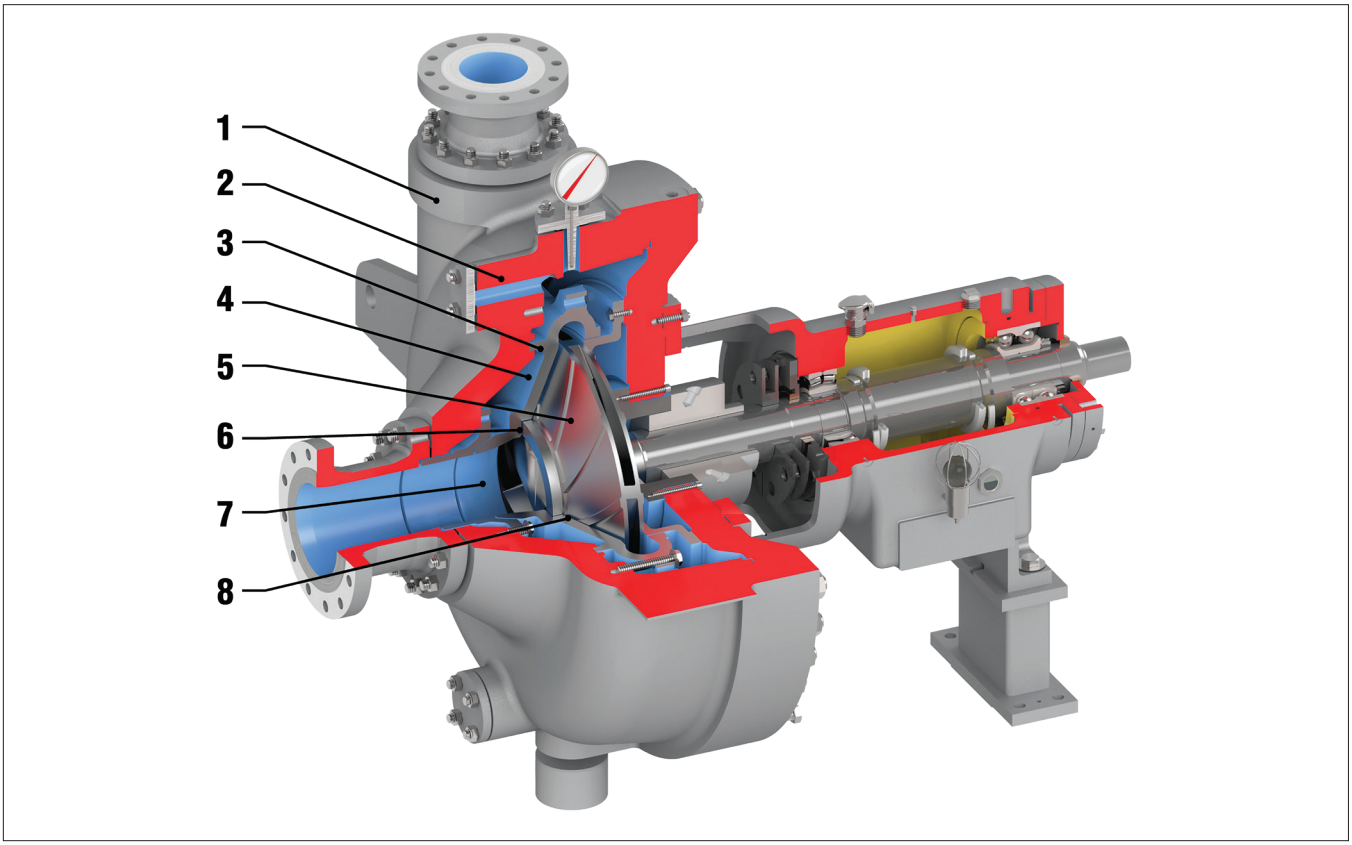
Lawrence Pumps® HPX6000

Fully Lined API Slurry Pump

ISO 13709/API 610 (OH2)



Experience In Motion



Meeting the Challenges of Heavy Oil Processing

Heavy oils and synthetic fuels require higher process temperatures and expose pumps to increased levels of abrasive slurries. By using the “pump within a pump” concept, the HPX6000 ISO 13709/API 610 fully lined slurry pump reliably and safely handles abrasive solids at elevated temperatures without the danger of pump casing erosion.

Features and Benefits

1. The pressure casing is completely protected from erosion and abrasion from the high-velocity process stream by replaceable mechanically fastened liners. This design greatly extends the useful life of the pressure casing and eliminates a safety hazard found on all standard unlined, partially lined or coated ISO/API pumps. Pressure casings are available in a variety of materials, including steel, stainless steel, CA6NM and duplex.
2. Casing penetrations, including the vent and drain, are protected from erosion by the renewable liners. Flanges can be machined to most client specifications.
3. Casing liners are available in multiple abrasion-resistant materials and surface treatments to meet any process or operational requirement.
4. After long hours of operation, liner wear surfaces can be machined to re-establish proper operating clearances and restore pump efficiency.
5. Repelling vanes on the front and back of the impeller minimize recirculation, aid in balancing axial thrust, and do not require any external flushing.
6. Components are designed with heavy-walled sections that extend their life beyond that found in standard ISO/API pumps.
7. Inducers are available for low-NPSHA applications. This option requires an upgraded rotor to manage the additional loads on the shaft.
8. The cost of replacing the renewable liners is only a fraction of the replacement or repair cost of a coated ISO/API pump pressure casing.

Guaranteed to Not Wear Out

Fluid velocity is contained within renewable hard metal wear liners. At no time is the pressure casing exposed to the high-velocity fluid streams. The pressure casing in a typical ISO/API pump is completely exposed to erosive wear that can quickly compromise safety and result in expensive, unplanned repairs. Flowserve can offer a warranty* for the HPX6000 ISO/API fully lined slurry pump pressure casings against erosive wearthrough for the life of the equipment.

Lowest Life Cycle Cost of Any ISO/API Abrasive Slurry Pump on the Market Today

HPX6000 impellers and casing liners are designed to last more than three times as long as standard ISO/API pumps with coated parts in similar services. In addition, casing liners are a fraction of the cost of replacing or repairing an ISO/API coated pump pressure casing. Reduced wear rates translate to longer operational cycles, reduced maintenance costs and increased plant efficiency.

Adaptable Hydraulics Allow Process Flexibility

Multiple hydraulic sizes are available for each HPX6000 pressure shell. By changing the casing liner and impeller, pump performance can be altered without modification to the piping or foundations.

Oversized Bearing Frame for Extended Pump Life

The HPX6000 utilizes a rigid, oversized bearing frame to control shaft deflection. During process upset conditions, the stiff rotor design maintains shaft deflection below ISO/API requirements, helping ensure long mechanical seal life. The keyed foot support allows for axial growth without disrupting coupling alignment. It also provides structural support for an oversized bearing frame.

Standard antifriction or optional hydrodynamic bearings provide an L10 life in excess of 100 000 hours at rated flow conditions, providing the durability required for extended operating life.

Operating Parameters

- Flows to 3409 m3/h (15 000 gpm)
- Heads to 244 m (800 ft)
- Pressures to 83 bar (1200 psig)
- Speeds to 3600 rpm

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