



***Lawrence Pumps® HED6400  
Fully Lined Between Bearings, Radially  
Split, Two-Stage, Slurry Pump***

ISO 13709/API 610 (BB2)

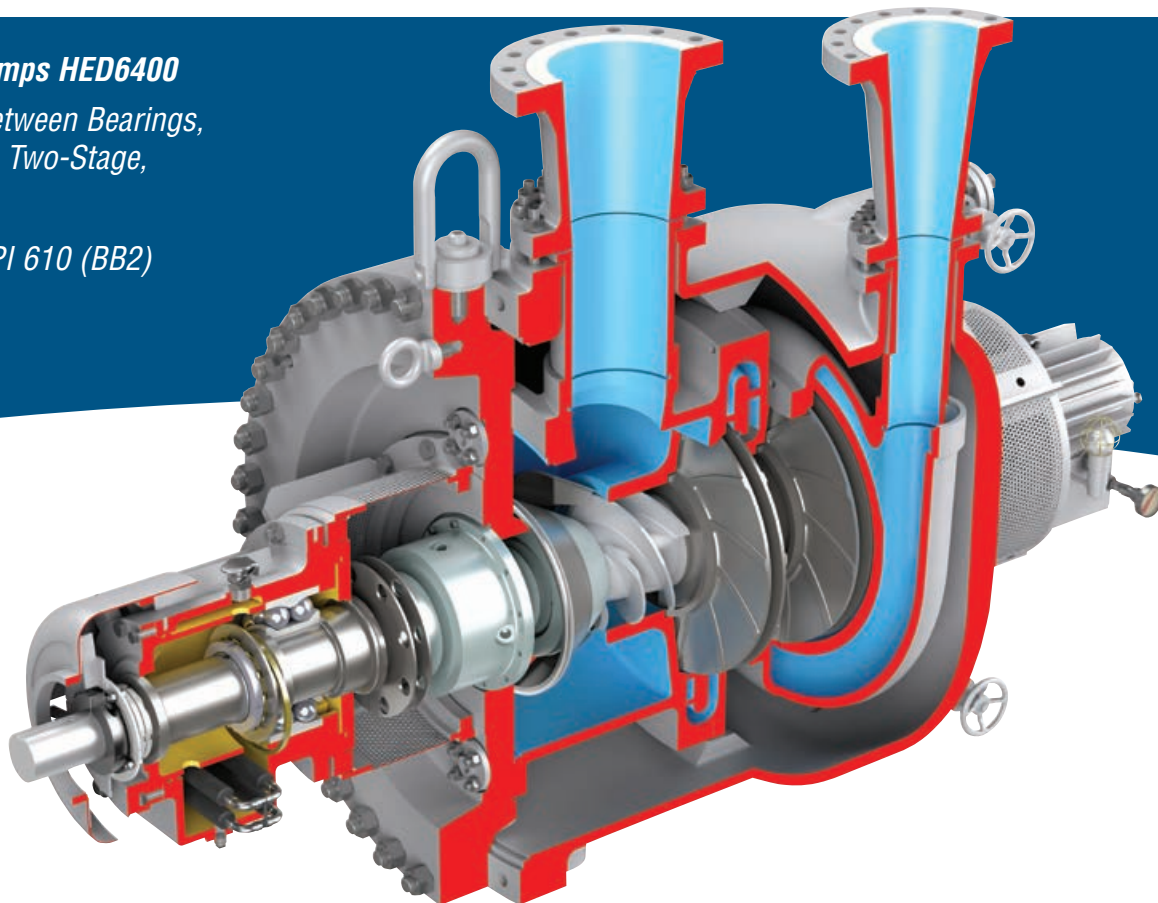


***Experience In Motion***

## Lawrence Pumps HED6400

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Radially Split, Two-Stage,  
Slurry Pump

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## Safety and Performance in Heavy Oils Processing

*Processing heavy oils and synthetic fuels requires pumps capable of withstanding high-velocity abrasive slurries at high process temperatures. By using the “pump within a pump” concept, the HED6400 can do just that.*

Compliant with ISO 13709/API 610 (BB2), the HED6400 is a true slurry pump. The pressure casing of the HED6400 is completely protected from erosion and abrasion by replaceable liners. This design greatly extends the useful life of the pressure casing and eliminates a safety hazard inherent to all standard unlined, partially lined or coated pumps. As a result, the HED6400 is able to reliably and safely handle abrasive solids at elevated temperatures without the danger of pressure casing failure.

## Features and Benefits

**Fully Replaceable, Mechanically Fastened Casing Liners** protect the pressure casing, including all penetrations, from erosion and abrasion.

- Liners may be economically replaced or machined to re-establish proper operating clearances and restore pump efficiency.
- Liners are available in several abrasion-resistant materials to meet process requirements.

**Pressure Casings** are available in a variety of materials, including carbon steel and austenitic, duplex and martensitic stainless steels.

**Heavy-walled** sections extend component life beyond that of standard ISO/API pumps.

**Flanges** can be machined to most client specifications.

**Repelling Vanes** on the front and back impeller shrouds minimize recirculation, aid in balancing axial thrust and do not require external flushing.

**Inducers** are available for low-NPSHA applications. An upgraded rotor is utilized to manage the additional loads on the shaft.



### ***Guaranteed to Not Wear Out***

In the HED6400, the high-velocity fluid is contained within renewable hard metal liners. At no time is the pressure casing exposed to erosion or abrasion from the fluid. The pressure casing in a typical ISO/API pump is completely exposed to erosive and/or abrasive wear that can quickly compromise safety and result in expensive, unplanned repairs.

Flowserve can offer a lifetime warranty\* for the HED6400 ISO/API fully lined slurry pump pressure casings against erosive/abrasive wear-through.

### ***Low Total Cost of Ownership***

Available in several abrasion-resistant materials, HED6400 impellers and casing liners are designed to last more than three times longer than standard ISO/API pumps with coated parts in similar services. In addition, the cost of replacing or re-machining casing liners is a fraction of the cost of replacing or repairing an ISO/API coated pump pressure casing. Extended operational cycles combined with reduced maintenance costs translates into low total cost of ownership.

### ***Adaptable Hydraulics Provide Process Flexibility***

The hydraulic performance of the HED6400 may be altered by changing the casing liner and impeller. This flexibility enables plant operators to adapt pump performance to changing process conditions or operating requirements. Changes may be completed without modifying the pump foundation and piping, keeping associated implementation costs low.

### ***Oversized Bearing Frame for Extended Pump Life***

The HED6400 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.

Standard antifriction or optional hydrodynamic bearings provide an  $L_{10}$  life in excess of 100 000 hours at rated flow conditions, offering the durability required for extended operating life.

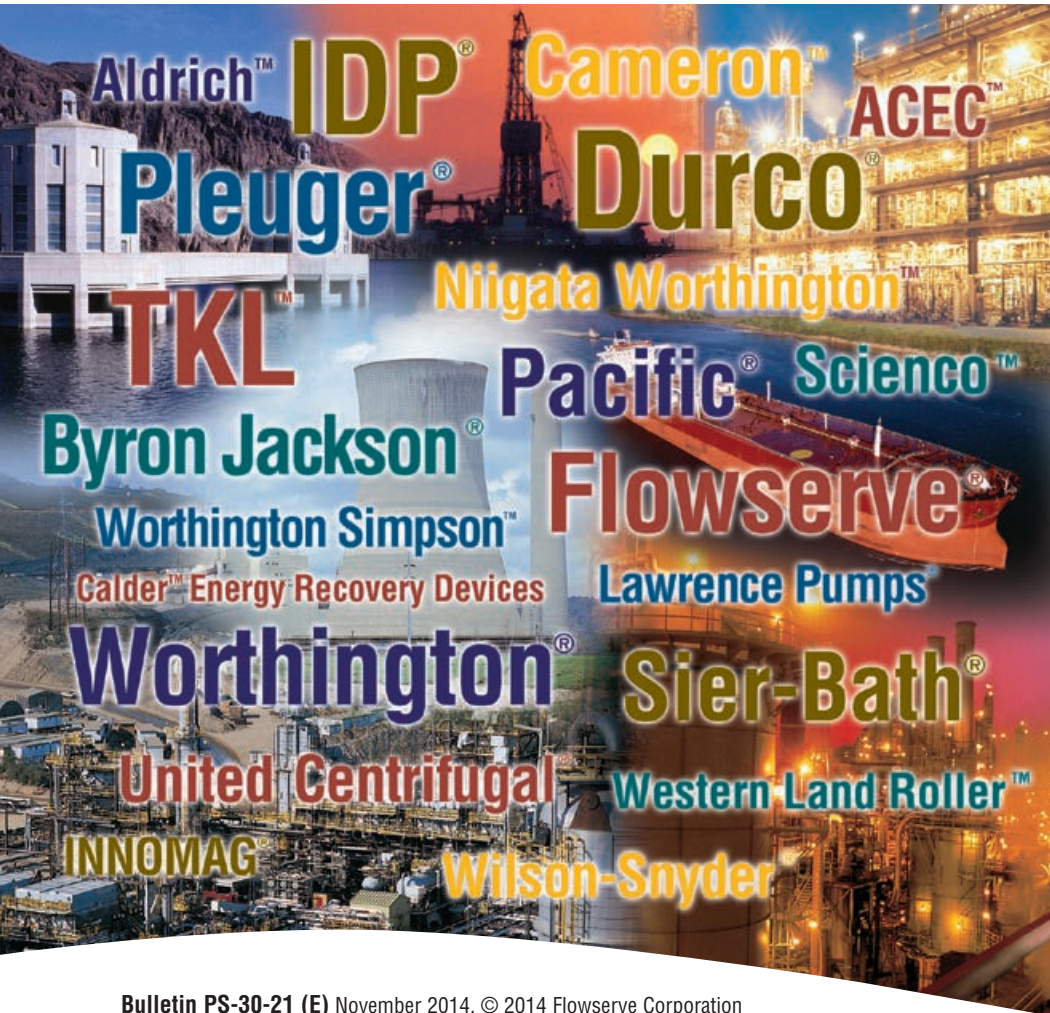
### ***Operating Parameters***

- Flows to 3409 m<sup>3</sup>/h (15 000 gpm)
- Heads to 488 m (1600 ft)
- Pressures to 83 bar (1200 psig)
- Speeds to 3600 rpm



\*Subject to terms and conditions; please inquire for details.





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