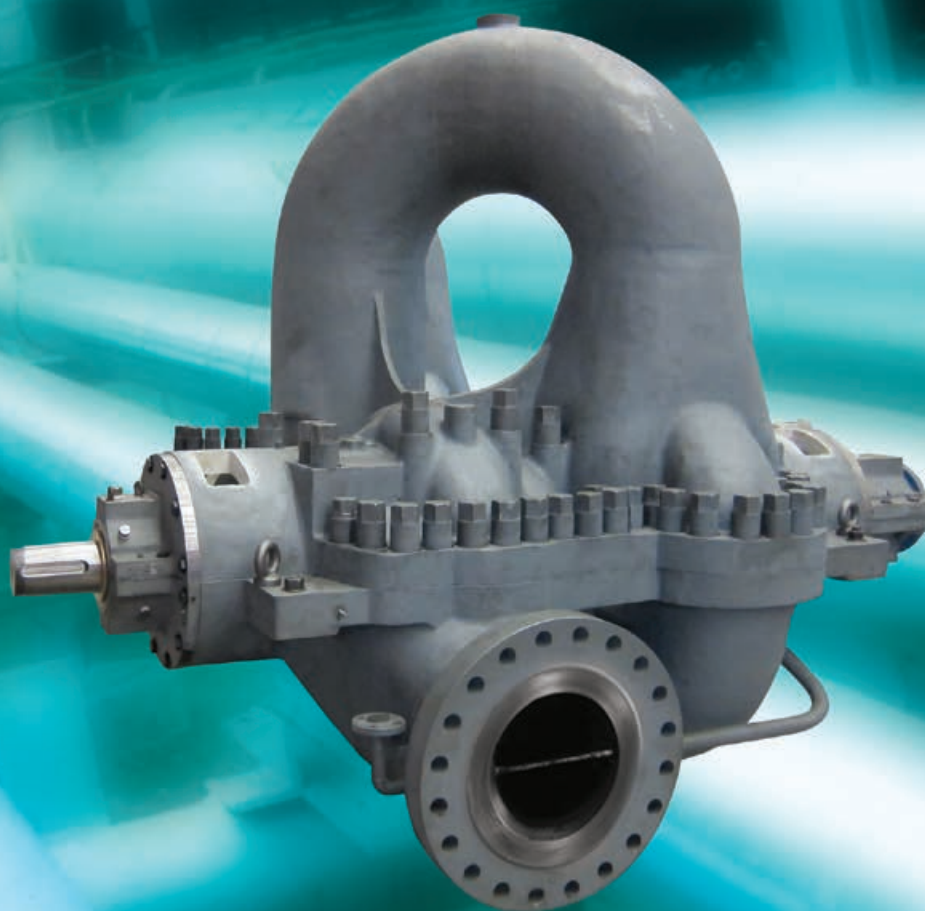




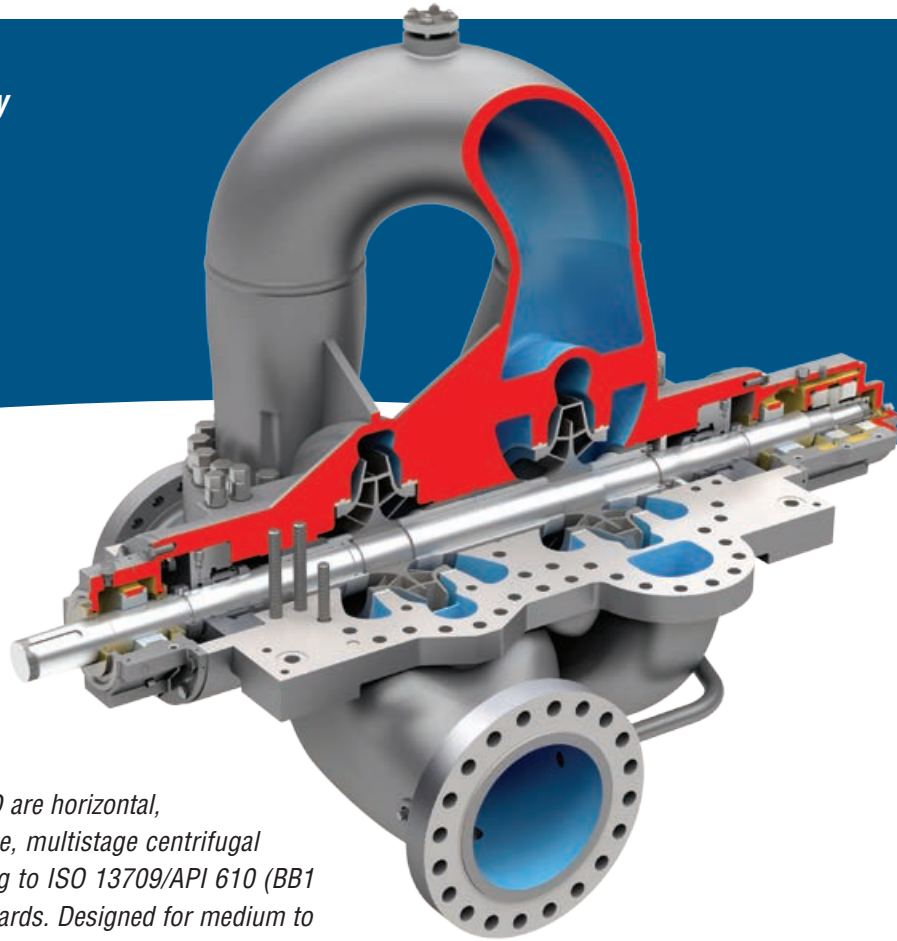
***BF and BFD
Between Bearings, Axially Split
Multistage Pumps***

ISO 13709/API 610 (BB1 and BB3)



Experience In Motion

BF and BFD Between Bearings, Axially Split Multistage Pumps



The BF and BFD are horizontal, axially split case, multistage centrifugal pumps adhering to ISO 13709/API 610 (BB1 and BB3) standards. Designed for medium to high flows, high heads and maximum efficiency, the single-suction BF and double-suction BFD are well suited for pipeline, refinery and waterflood services. Both configurations are available in 2, 3 and 4 stage designs.

Operating Parameters

- Flows to 4300 m³/h (18 800 gpm)
- Heads to 2130 m (6000 ft)
- Pressures to 230 bar (3335 psi)
- Temperatures to 200°C (400°F)

Features and Benefits

Suction and Discharge Nozzles are integrally cast with the lower casing, allowing disassembly and inspection of the rotating assembly without disturbing the piping.

Double or Staggered Single Volute Design balances radial loads on the shaft, minimizing shaft deflection.

Near-centerline Mounting of casing feet ensures optimal alignment and performance when operating at elevated temperatures.

Long-radius Crossovers minimize flow losses between stages, helping to enable high efficiencies.

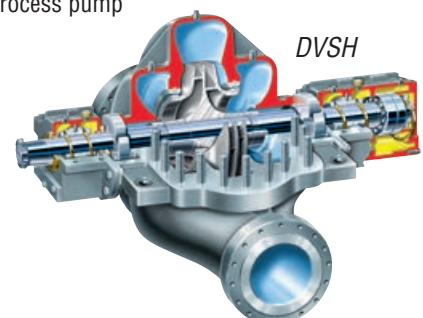
Cap Nuts are arranged on the top half casing parting flange, allowing easy casing removal for rotor inspection and maintenance.

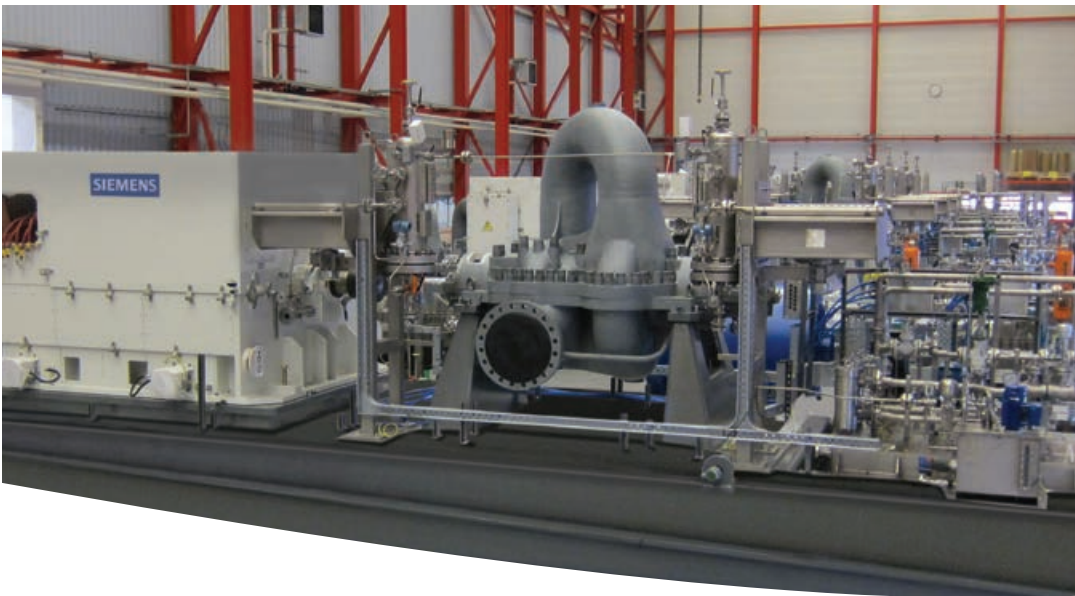
Shaft Sleeves are threaded against rotation and locked against opposite rotation with a set screw.

Replaceable Casing and Impeller Wear Rings control interstage leakage and provide hydraulic stability.

Complementary Pump Designs

- DVSH ISO 13709/API 610 (BB1) axially split, single-stage process pump
- UZDL ISO 13709/API 610 (BB1) axially split, two-stage process pump
- DMX ISO 13709/API 610 (BB3) axially split, multistage process pump





Bearing Designs to Suit Any Application

The BF and BFD are offered with a variety of bearing arrangements to meet application requirements.

- Standard-duty
 - Radial: Double-row, self-aligning ball bearing
 - Thrust: Double-row, angular-contact ball bearings mounted back-to-back
- Medium-duty
 - Radial: Split sleeve, plain-surface bearings
 - Thrust: Double-row, angular-contact ball bearings mounted back-to-back
- Heavy-duty
 - Radial: Split sleeve, plain-surface bearings
 - Thrust: Tilting pad thrust bearings

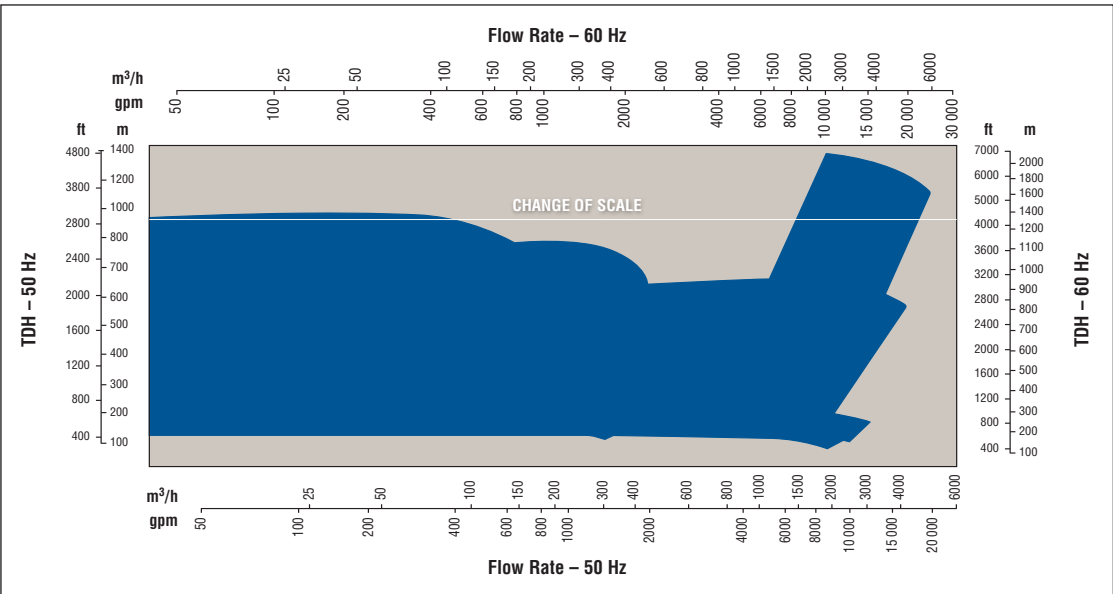
Bearing Lubrication

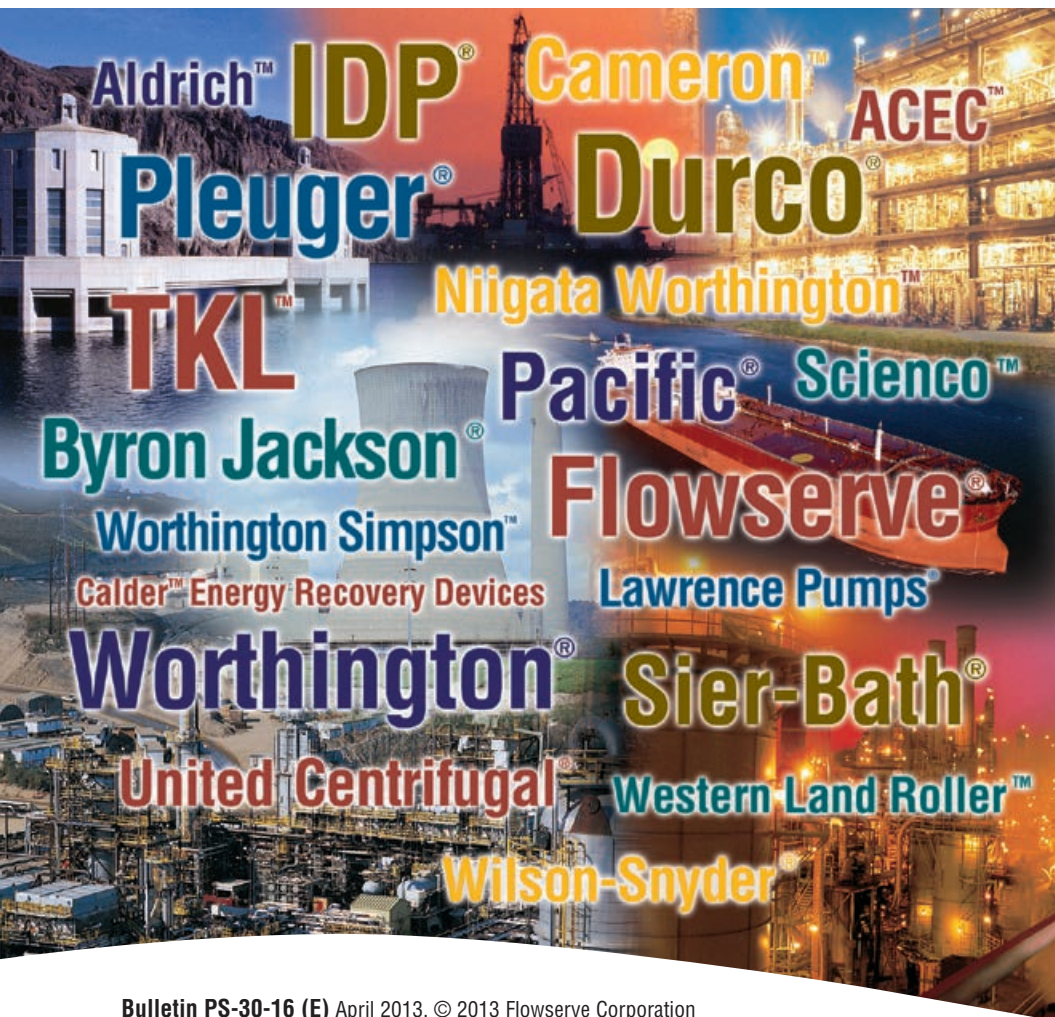
Standard lubrication is via oil ring, which prolongs bearing life by ensuring oil penetrates the bearings without foaming. Force-feed lubrication is required for tilting pad bearings.

Back-to-Back Impeller Design

Single-suction impellers (BF) are mounted back-to-back in pairs, providing balanced axial loads over the entire operating range. Locating rings and interference fits assure positive axial positioning. Double-suction impellers (BFD) may be furnished to lower NPSHR and minimize cavitation.

Range Chart





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