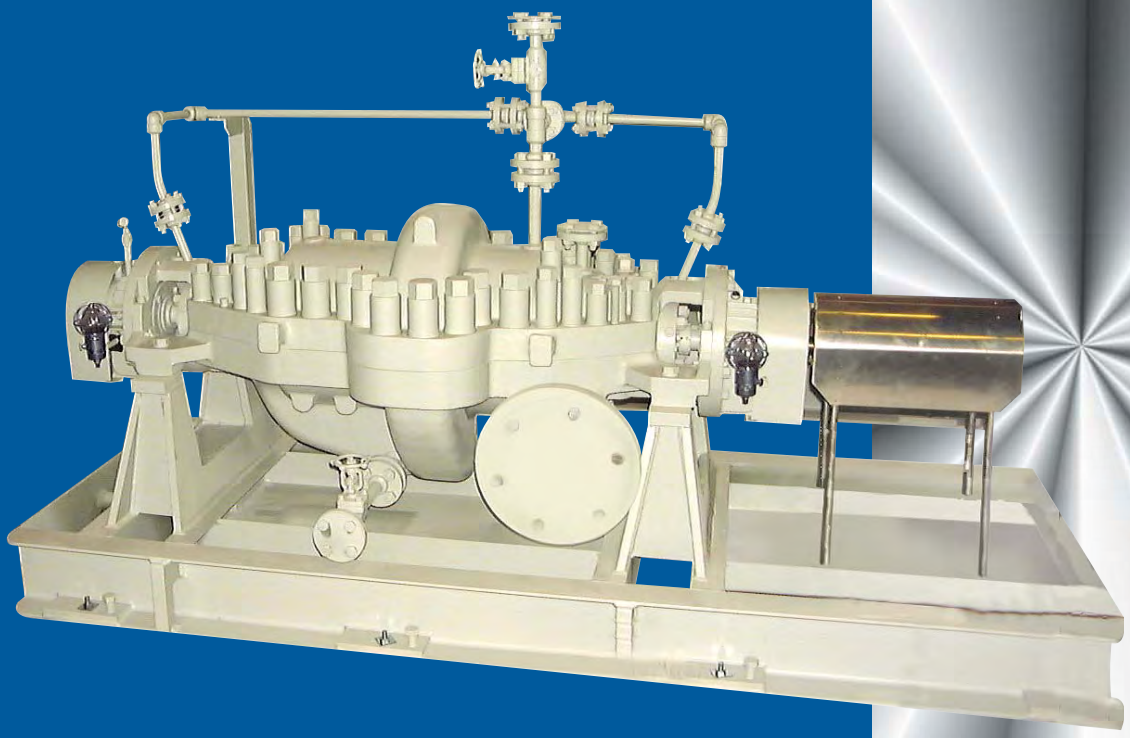
SNM AXIALLY SPLIT MULTISTAGE PUMPS

Model MTB

API 610 11th Edition Process Pump



MODEL MTB Axially Split Multistage Between Bearings Pumps (API Class BB3)

Design Feature

・The model MTB is horizontal, axially split, multistage, single suction, diffuser guide-vane type, centerline support, between bearings process pump.

・MTB is suitable for high pressure and a wide range of process applications.

・Heavy duty construction is in full compliance with API610 11th edition.

・Seal chamber
Seal chamber dimensions are in full compliance with API682 and API610 standards.
Dual seals can be installed with our standard seal chamber dimension.

・Minimal variety of spare parts
By standardizing our horizontal, between bearings pumps, replacement parts are interchangeable and can be provided with little or no lead time.

・Long bearing life
Opposite impeller stage arrangement and diffuser guide-vane design produce pumps with optimum radial and axial forces balance, ensure smooth operation and long bearing life.

・Easy maintenance
Overhaul can be carried out without disrupting main pipings and driver.
Jack bolt is furnished at rabetted fit area in order to prevent obstruction of disassembly by sticking.

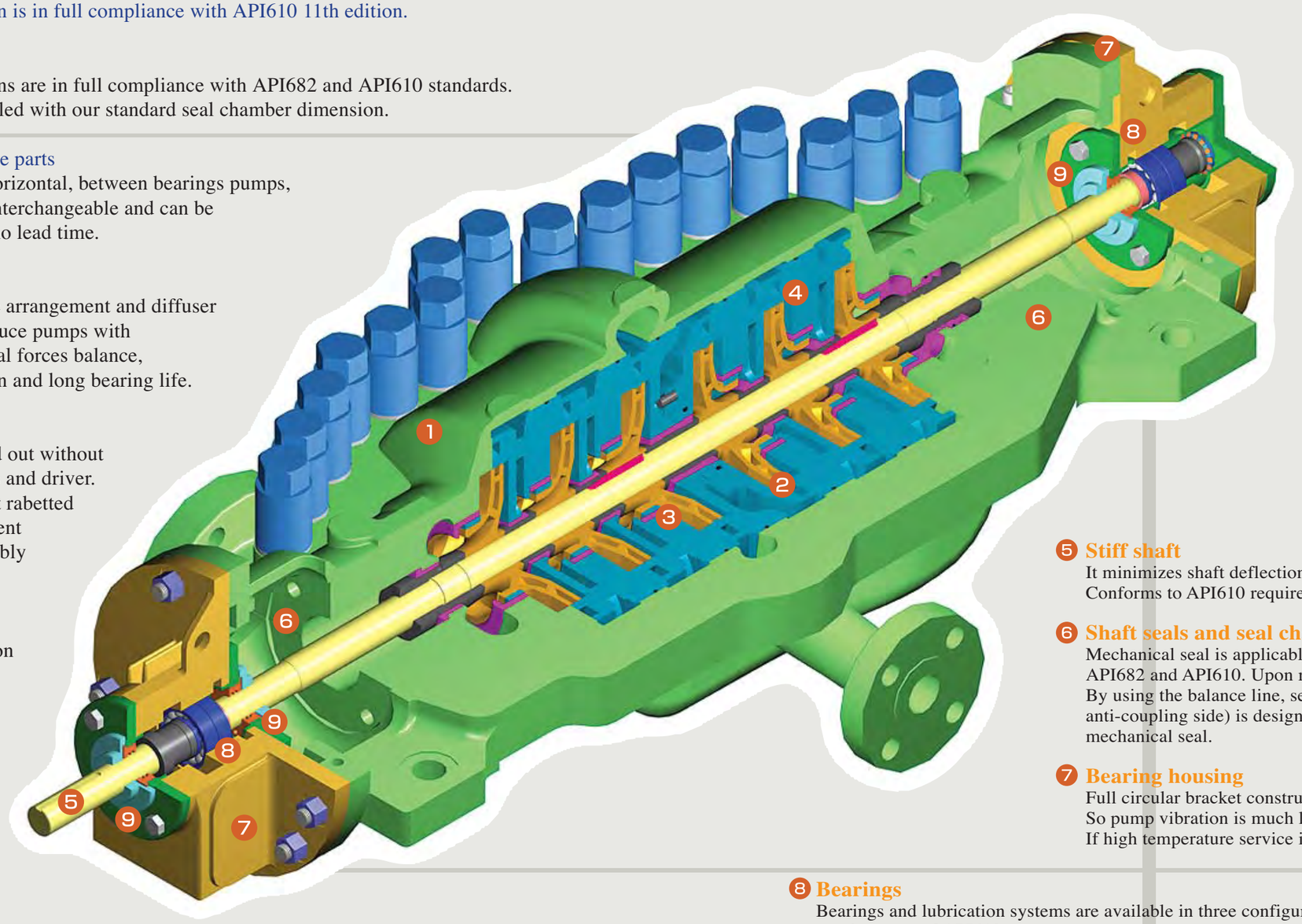
・Low vibration
Full circular construction of bearing housing and optimum clearance design minimizes vibration of pump.

Specification

・Max. flow rate up to 650 m^3/h

・Max. diff. Head up to 1500 m

・Max. operation temperature up to 200 ℃



1 Casing
The casing is designed in full compliance with API610. (design pressure, nozzle force and moment, etc.)
Casing gasket is appropriately selected to meet the specific liquid and specific operating condition, ensures satisfactory seal performance.
Centerline support design prevents misalignment caused by thermal expansion.
Side suction and side discharge nozzles are integrally cast with lower half casing, allowing removal of the rotor without disrupting driver and piping connections.

2 Impeller
Closed single suction multistage impeller is designed to the wide range of specific operating condition with maximum efficiency.
The impeller is dynamically balanced to meet the API610 requirement.
Opposed impeller stage arrangement reduces thrust loads and prolongs bearing life.

3 Renewable wear rings
Renewable wear rings are furnished.

4 Diffuser
Precision machined diffuser guide-vane provides high sustained efficiency and evenly distributes radial forces.

5 Stiff shaft
It minimizes shaft deflection for longer bearing and seal life.
Conforms to API610 requirement.

6 Shaft seals and seal chamber
Mechanical seal is applicable to all seal types and plans in accordance with API682 and API610. Upon request, gland packing can be installed.
By using the balance line, seal chamber pressure of both side(coupling and anti-coupling side) is designed to maintain the suction pressure for the mechanical seal.

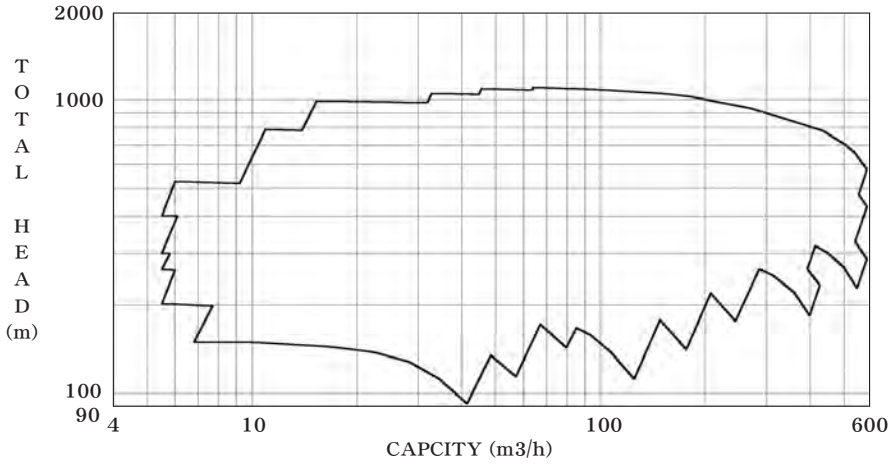
7 Bearing housing
Full circular bracket construction minimizes vibration of bearing housing.
So pump vibration is much lower than the limit of API610.
If high temperature service is specified, suitable cooling system is furnished.

8 Bearings
Bearings and lubrication systems are available in three configurations to meet service conditions and the requirements of API610.
1. ball radial and angular contact ball thrust / flooded lubrication
2. sleeve radial and angular contact ball thrust / oil ring lubrication
3. sleeve radial and tilting pad thrust / pressurized lubrication

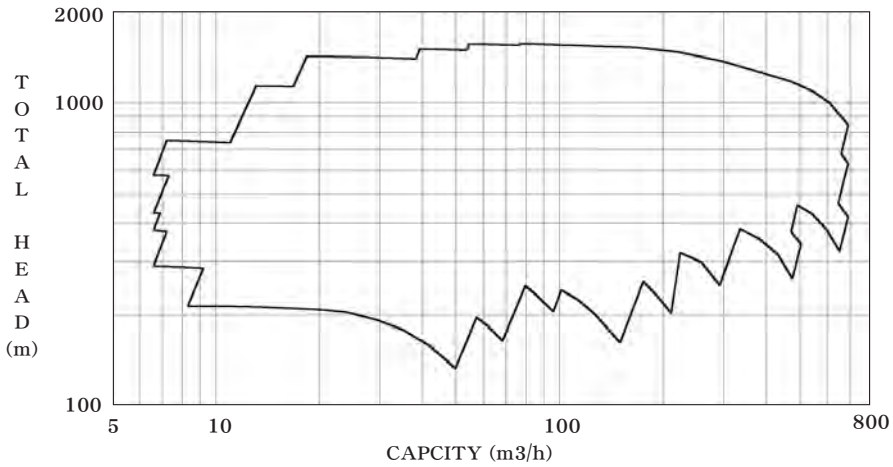
9 Replaceable labyrinth end seals and deflectors
Labyrinth end seals and deflectors effectively retain oil in the housing and prevent entry of foreign material into the housing.

Model MTB performance chart

Coverage-50Hz



Coverage-60Hz



(※) In addition to above-mentioned chart, we will provide the best design for your application.

Optional Feature

Design for optimum operating condition

・3D machined impeller

3D machined impellers(※) can be designed and produced to meet specific operating condition by using advanced flow analysis method.

(※)Machining processes for fabricated impellers offer capabilities for more exact profiles and higher efficiencies.

3D machined impeller

Optional lubrication

・Oil mist lubrication

Oil mist lubrication can be provided.

Optional Feature

For higher efficiency requirement

- Non-meatallic material wear rings

  Use of non-metallic material wear rings ensures improvement of pump efficiency. Running clearance can be reduced with improved operating reliability as well as termination of seizure under specified operating conditions.

- CCD (=Continuous Crossover Diffuser)

  All machined CCD allows for less flow loss.
  Machined surfaces on flow passage are smoother and more precise than casting.
  The continuous crossover flow passages are based on flow analysis program and improve the hydrodynamic efficiency.
  Forged steel extends the diffuser's life.

C C D

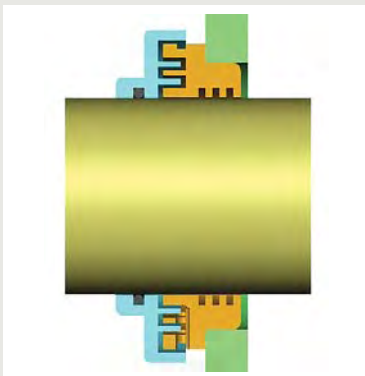
Special protector

- Special labyrinth seal and deflector
- Special gas breather
- Bearing protector

The above-mentioned parts will prevent lubricant contamination caused by cloudburst, sandstorm, entry of steam and other heavy condition.

Bearing protector

Special gas breather



Special labyrinth seal And deflector

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