

SNM

AXIALLY SPLIT SINGLE STAGE PUMPS

Model SD-S

API 610 11th Edition Process Pump



SHIN NIPPON MACHINERY CO.,LTD.

MODEL SD-S Axially Split Single Stage Between Bearings Pumps (API Class BB1)

■ Design Feature

- The model SD-S is horizontal, axially split, single stage, double suction, double volute, foot support, between bearings process pump.

- The SD-S is suitable for low NPSH, large capacity application.

- Heavy duty construction is in full compliance with API 11th edition.

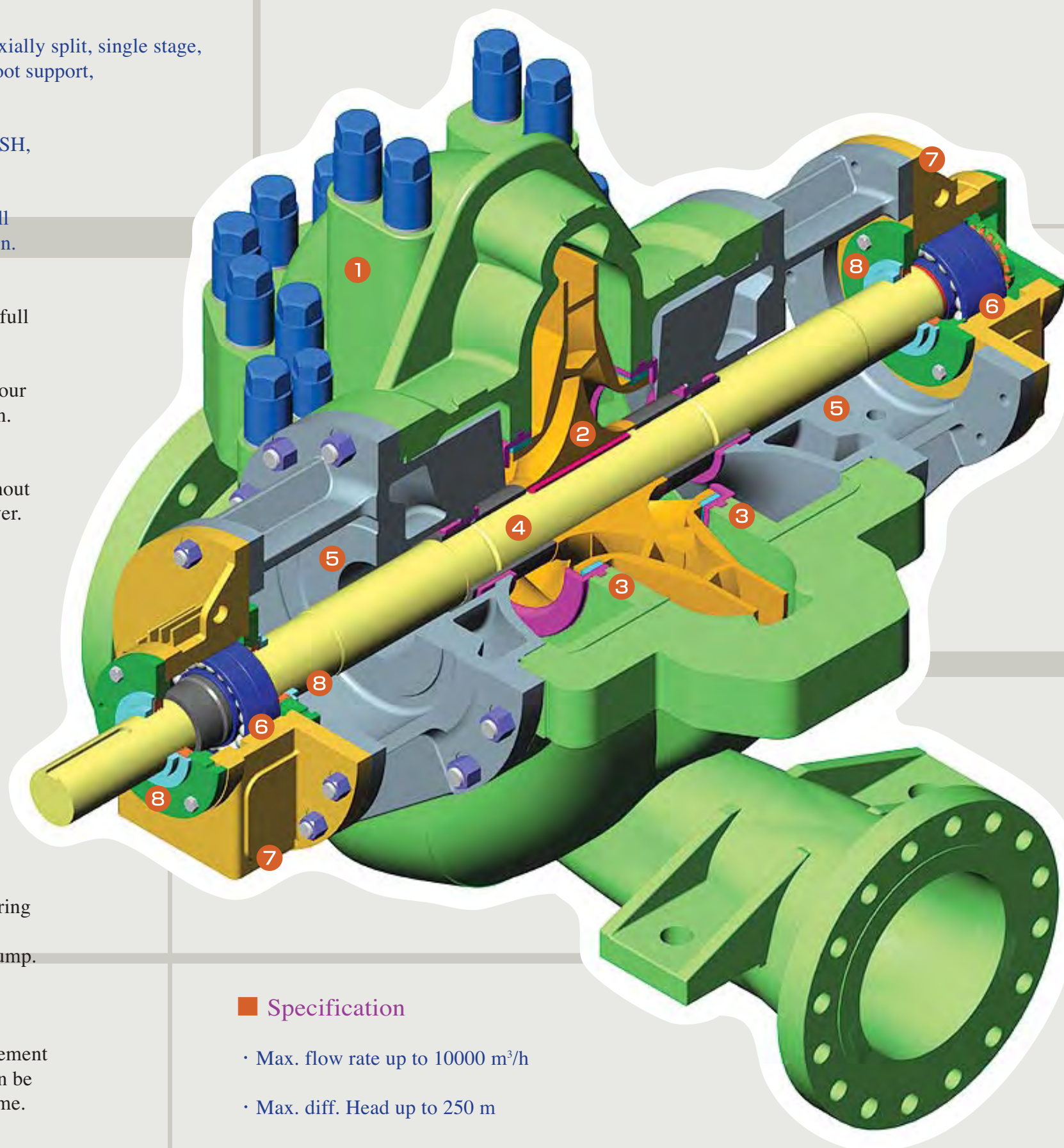
- **Seal chamber**
Seal chamber dimensions are in full compliance with API682 and API610 standards.
Dual seals can be installed with our standard seal chamber dimension.

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

- **Long bearing life**
Double volute casing and double suction impeller design produce pumps with optimum radial and axial forces balance, ensure smooth operation and long bearing life.

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

- **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.



■ Specification

- Max. flow rate up to 10000 m³/h
- Max. diff. Head up to 250 m
- Max. operation temperature up to 150 °C

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 the specific operating condition, ensuring satisfactory seal performance. Side suction and side discharge nozzles are integrally cast with lower half casing, therefore allow removal of the rotor without disrupting driver and piping connections. Double volute construction evenly distributes radial forces.

2 Impeller

Closed double suction impeller is designed to meet the specific operating condition with the maximum efficiency and low NPSH-required (NPSH3). The impeller is dynamically balanced to meet the API610 requirement. Balanced construction of double suction reduces thrust loads and prolongs bearing life.

3 Renewable wear rings

Renewable wear rings are furnished.

4 Stiff shaft

Minimizes shaft deflection for longer bearing and seal life.

5 Shaft seals

Mechanical seal is applicable to all seal types and plans in accordance with API610 and API682. Upon request, gland packing can be installed.

6 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

7 Bearing housing

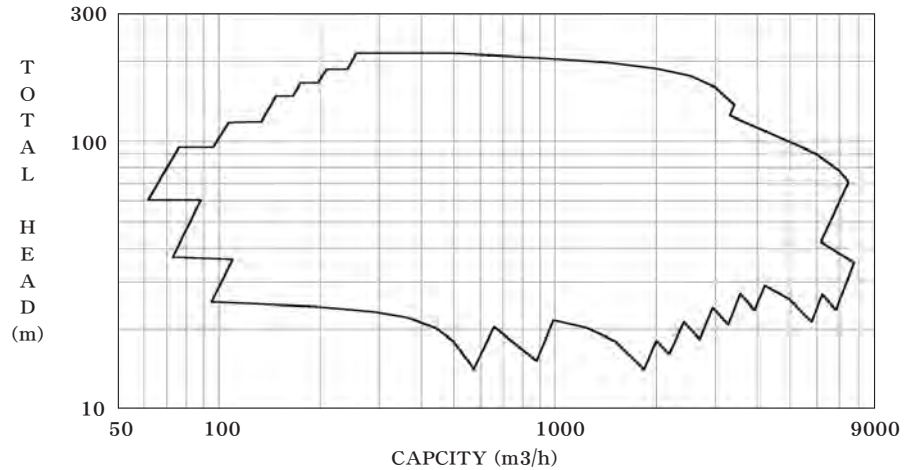
Full circular bracket construction minimizes vibration of bearing housing. So pump vibration is much lower than the limit of API610. If high temperature service is specified, suitable cooling system is furnished.

8 Replaceable labyrinth end seals and deflectors

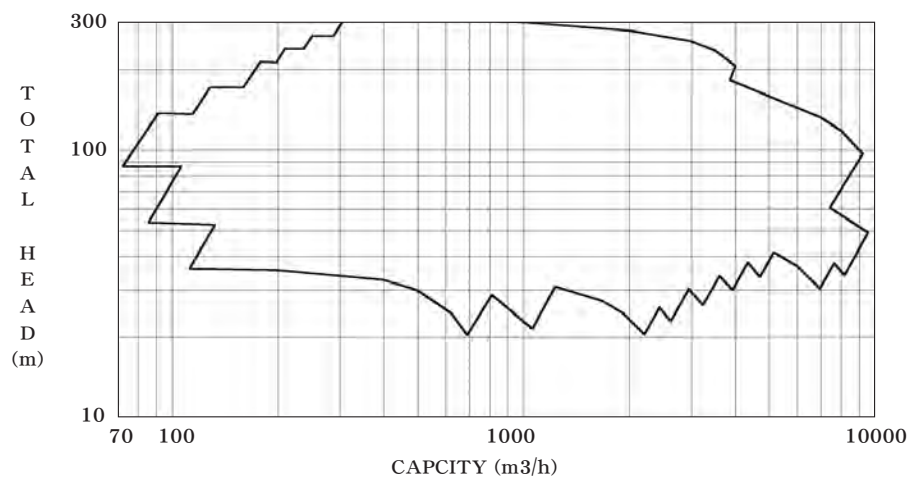
Labyrinth end seals and deflectors effectively retain oil in the housing and prevent entry of foreign material into the housing.

Model SD-S performance chart

Coverage-50Hz



Coverage-60Hz



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

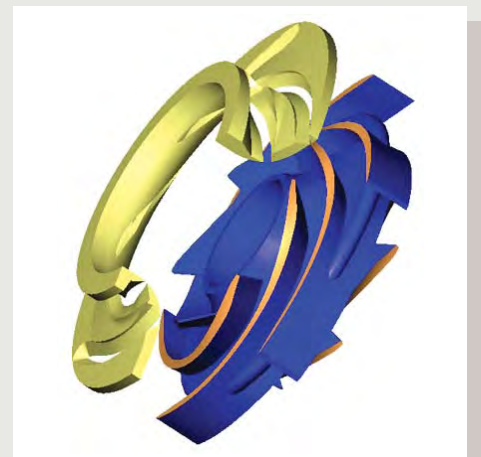
Optional Feature

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 efficiency.



3D machined impeller

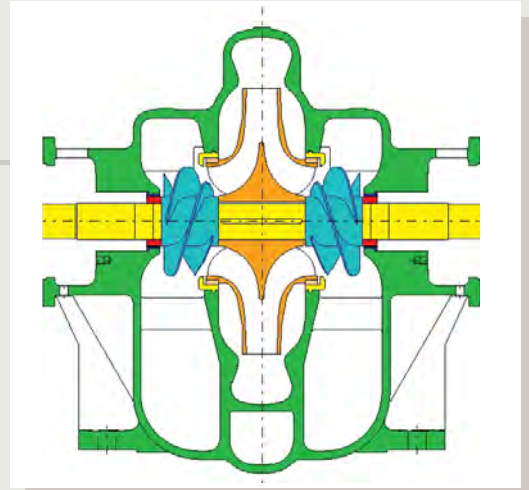
Optional Feature

■ For lower NPSH applications

- Suction inducer
Machined inducer with high efficiency can be installed



Suction inducer



■ For higher efficiency requirement

- Non-metallic 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.

■ Special protector

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

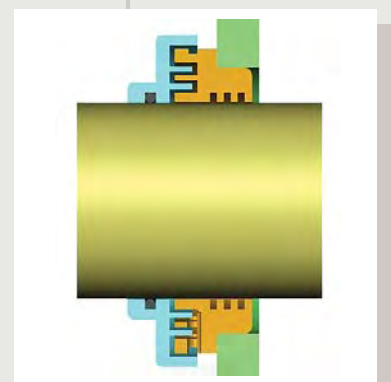
The above-mentioned parts will prevent lubricant contamination caused by cloudburst, sandstorm, entry of steam and other heavy condition.



Bearing protector



Special gas breather



Special labyrinth seal
And deflector

■ Optional lubrication

- Oil mist lubrication
Oil mist lubrication can be provided.

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