



Specialist for Pumping Technology



SPN

**Vertical in-line API process pump
(close coupled - OH5)**

Advanced pumping technology that moves our world

The SPN is a vertical in-line process pump designed and built according to API 610 latest edition (OH5). It is a radially split, volute type, single stage and single suction, close coupled centrifugal pump. Its robust construction meets pressure, temperature, nozzle loading and safety considerations required by petrochemical applications.

The SPN is driven by an electric motor and the impeller is mounted directly on the extended shaft of the electric motor. The pump is suitable to be directly mounted into the piping without the need of a baseplate. This in-line pump range has been developed in strict accordance with the latest SHELL DEP specification referring to API 610 and BS 4082.

With a comprehensive hydraulic coverage, the SPN type range is available in 19 sizes with several sets of impellers, especially designed for 50 Hz and 60 Hz applications. Moreover, the SPN can be provided with customized hydraulics to meet the customer's specific requirements.

Modern and robust design

Pressure tight and accurately shaped casing and casing covers are the result of progressive pattern, moulding and casting technique. Trend setting designs and precise machining with permanent and independent quality assurance ensure extreme reliability and long life.

Impeller

Single suction, closed, one-piece cast impeller, with replaceable impeller ring balancing holes near the hub. The impeller display high efficiencies and low NPSH values.

Driver

The driver and the pump compose a complete unit. The standard driver design is a vertical flanged motor with special shaft and bearings. Construction material for the shaft is in accordance with API 610 latest edition, while electric motors are in accordance with the SHELL DEP standard, VIK design specifications and DIN-ISO, DIN-EN, IEC and VDE.

Bearings

For this kind of vertical in-line pump, axial and radial forces are absorbed through motor bearings. Therefore, the electrical motor is equipped with one radial roller bearing and one axial thrust bearing.

Test Pressure

Pump casing and casing cover are tested to 1.5 times the maximum working pressure.

Direction of rotation

Clockwise viewed from the driver end.

Applications

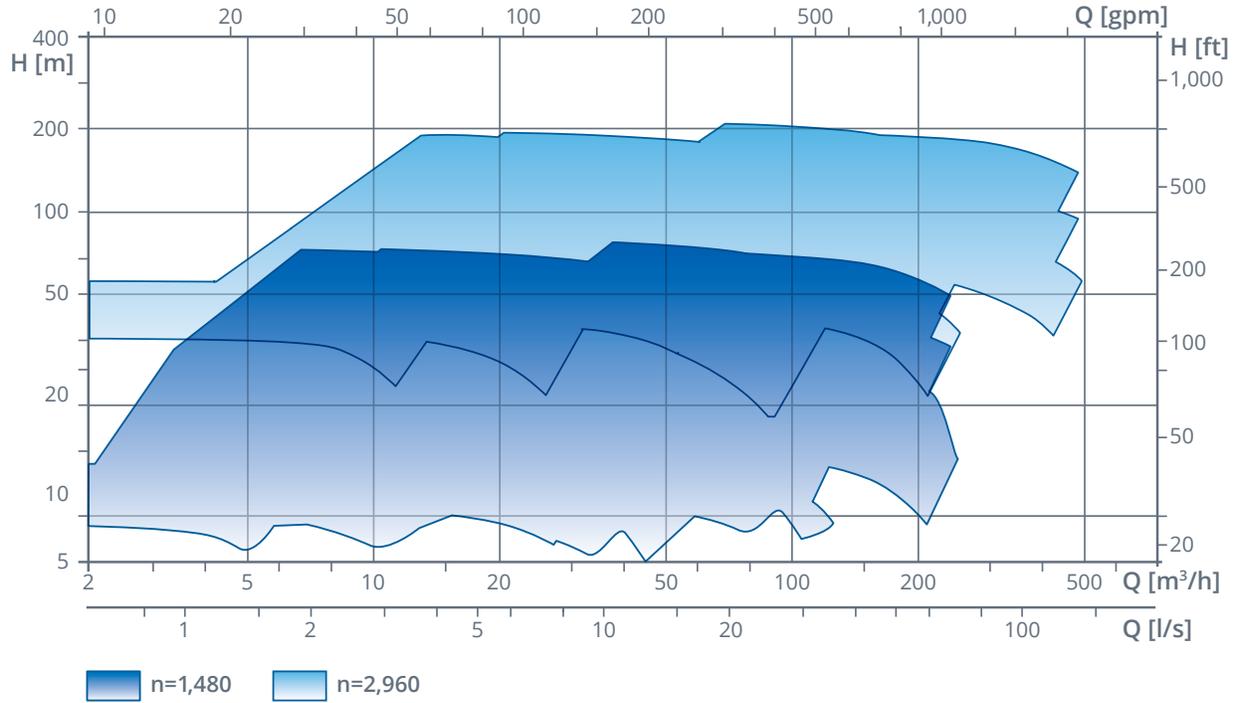
Heavy-duty applications in process industry and transfer systems. The range is designed for all process fluids and conditions.

- Oilfields and terminals
- Refining
- Pipeline
- Transfer systems
- Process industry
- On/Offshore

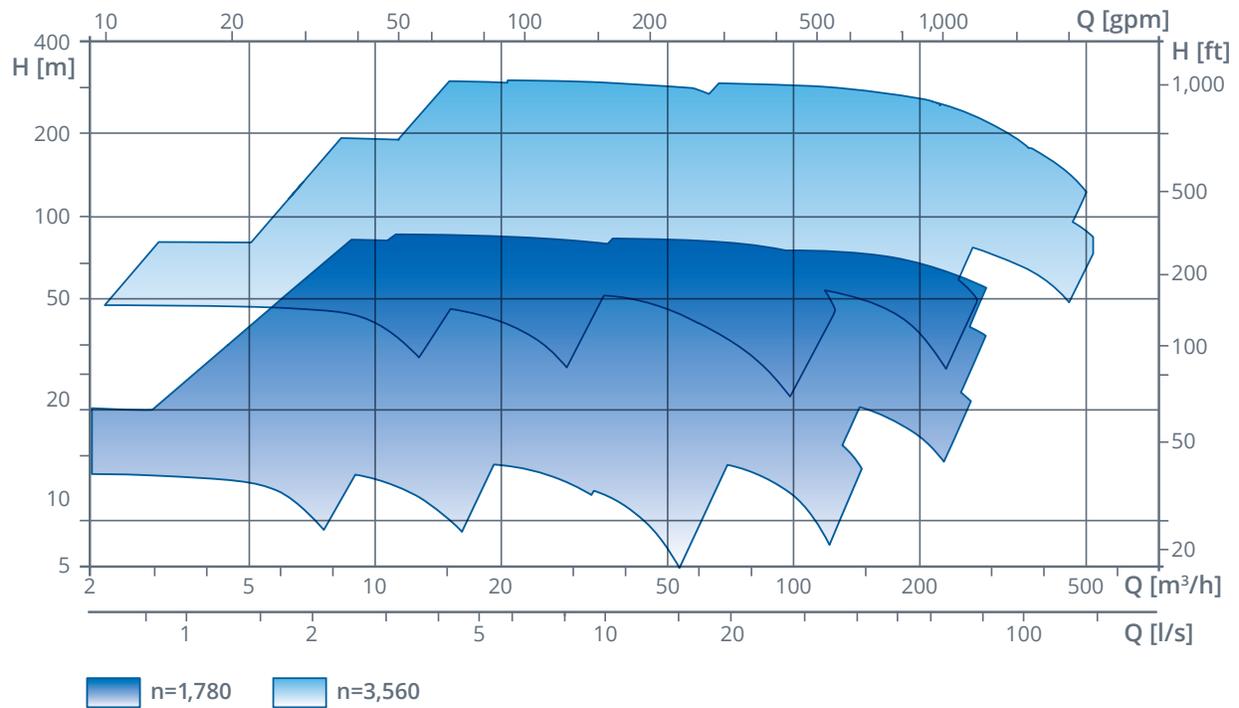


Performance Range

n = 1,480/2,960 rpm **50 Hz**



n = 1,780/3,560 rpm **60 Hz**



SPN

DESCRIPTION

- Heavy-duty process design according to API 610 latest edition - OH5 type
- Close coupled
- Foot mounted
- Single and double volute casings (depending on size)
- Single suction, dynamically balanced enclosed impeller
- Top pull-out design for ease of maintenance

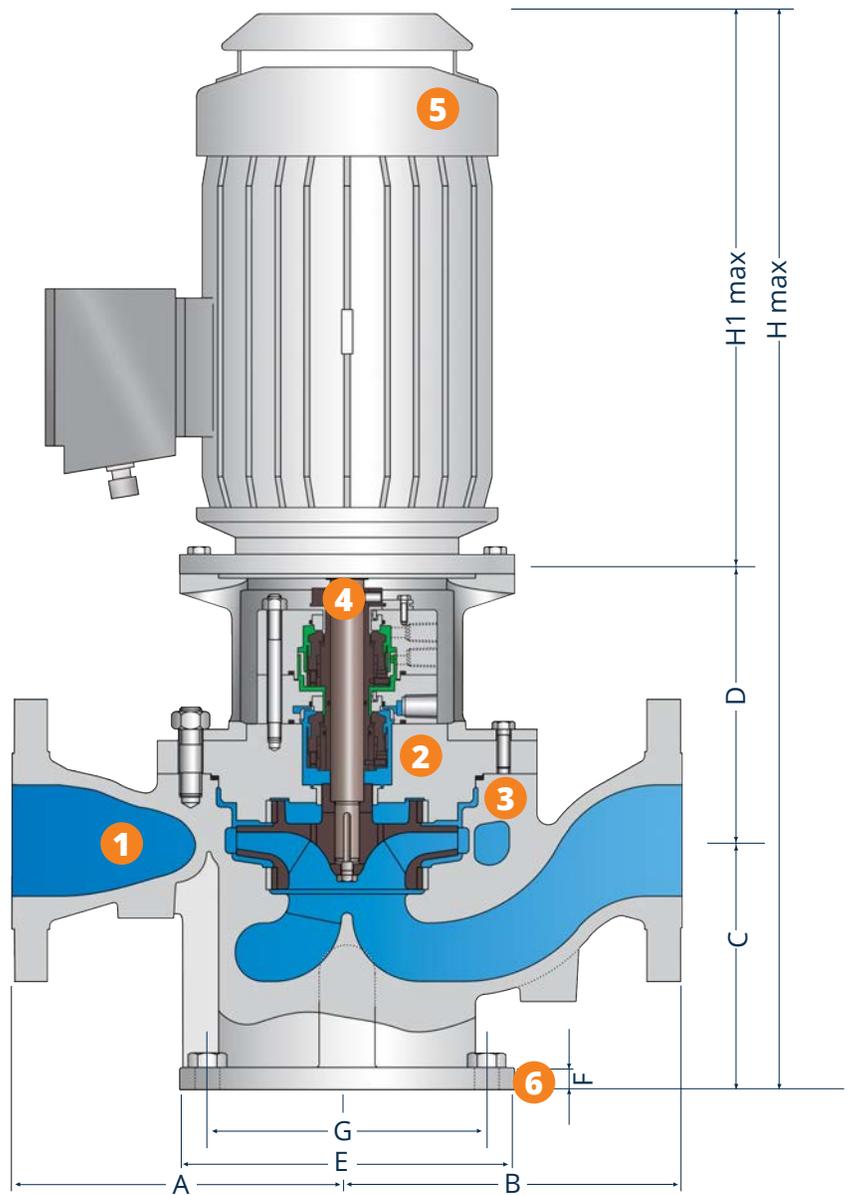
CONSTRUCTION MATERIALS

Materials of construction per API 610 latest edition. *Other materials available on request.*

OPERATING LIMITS

Capacity	up to 2420 gpm up to 550 m ³ /h
Head	up to 656 ft up to 280 m
Pressure	up to 580 psi up to 40 bar
Temperature	up to 500 °F up to 260 °C

NOTE: for pump operation outside this range, please contact a Ruhrpumpen representative.



Images for illustration purposes not actual construction.

1. 19 volute casing in-line pump sizes for 50 Hz and 60 Hz power supply, in top pull-out design from 1 1/2" to 8" discharge nozzle, acc. to API 610 latest edition, BS 4082 and Shell DEP latest edition.
2. Mechanical seal chamber dimensions in full compliance with API 610 and API 682.
3. Casing and casing cover in metal-to-metal contact. Non-asbestos spirally wound gasket made of stainless steel / graphite foils totally enclosed.
4. Shaft deflection in less than 0.03 mm in the stuffing box area is achieved by correct sizing of the bearings and the use of double volutes. Low vibration values will be achieved.
5. Anti-friction bearings with an operating life of more than 25,000 h. Special double angular contact bearings in the motor are available for compensation of high axial forces.
6. Foundation support is possible with a separate foot-plate.

Other Ruhrpumpen products



VLT Vertical Canned Pump

Low NPSH "shockless entry" first stage impeller (single or double suction). Single or multi-stage. HI design, cryogenic and API 610 latest edition (VS6) constructions available.

Condensate service in power generation plants; Pipelines; Hydrocarbons; Refineries.



VSP Sump Pump

HI design and API 610 latest edition (VS4) constructions available. Semi-open impeller for clean water applications and enclosed impeller for solids handling (non-clog).

Hydrocarbons processing; Sump drainage; Flood control; Water treatment; Open or closed drain service; Utility service.



VTP Vertical Turbine Pump

HI design and API 610 latest edition (VS1) constructions available. Multi-stage with semi-open and enclosed impellers. Up to 30 stages, according to application.

Hydrocarbons service; Deep well irrigation and dewatering; Condensate extraction; Water supply systems.



ZW Axially Split Pumps

HI design (BB1). High efficiency, foot mounted design with double suction, enclosed impeller. Can be mounted vertically or horizontally.

Pipeline; Cooling towers; HVAC; Dewatering; Water supply systems; Fire protection.



IVP Vertical In-Line Pump

HI design (OH4 / OH5). Available in split and close coupled configurations. Top pull-out design for ease of maintenance.

Chemical and petrochemical; Water supply systems; Food processing; Fire protection.



CPO ANSI Process Pump

Single stage, end suction pump compliant with the ANSI / ASME B73.1 specification. Open impeller design allows handling of solids in suspension. Optional C-Frame.

Chemical and petrochemical; Auxiliary services in power plants; Agricultural irrigation; Food processing; Pharmaceutical.

Sealless magnetic drive pumps
General end suction process pumps
Single stage overhung pumps
Single and multi-stage between bearings pumps

Vertical multi-stage pumps
Reciprocating plunger pumps
Fire protection pump systems
Hydraulic decoking systems

+65 years creating the pumping technology that moves our world

Ruhrpumpen is an innovative and efficient pump technology company that offers highly-engineered and standard pumping solutions for the oil & gas, power generation, industrial, water and chemical markets. We offer a broad range of centrifugal and reciprocating pumps that meet and exceed the requirements of the most demanding quality specifications and industry standards such as API, ANSI, UL, FM, ISO and Hydraulic Institute.

