

SPN

Vertical Heavy Duty Close Coupled
Process Pumps API 610 9th Edition



SPN Pumps for multipurpose Applications in all Fields of Process Industry

The RUHRPUMPEN Type SPN is a vertical arrangement, process design, radial split, volute type, single stage, single suction, close coupled design, suction and discharge position: inline pump type OH5, according to API 610, 9th Edition.

Design Features

Vertical, one stage, single suction centrifugal pump according to API 610, 9th Edition with mechanical seal in accordance with API 682.

The pump is driven by an electric motor and the impeller is mounted directly on the extended shaft of the electric motor. The pump is suitable for being directly mounted into the piping without the need of a foundation.

This inline pump range has been developed in strictly accordance with the latest SHELL DEP Specification referring to the API 610 and the BS 4082.

Range of Application

The SPN inline pumps are a wide range of heavy duty centrifugal pumps for operation in process industry and transfer systems. The range is designed for all process fluids and process conditions. It is in accordance with the severe specifications of API Standard 610, 9th Edition, combined with many years of experience in design, manufacture, quality assurance and operation of process pumps under heavy and medium duty conditions.

Because of the direct installation in the pipeworks and the easy maintenance this pump range has already got a wide application range.

Modern and Robust Design

Pressure tight and accurately shaped casing/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.

Reduction of radial loads, thereby increase of bearing and shaft seal life through reduction of deflection by proper design of volutes.

The corrosion allowance for the wall thickness on the casings and casing covers is 3.2 mm or more.

All pumps are equipped with casted flanges acc. to ASME B 16.5 300lb, alternatively acc. to EN 1092-1, PN40. For special conditions all relevant ASME- or EN/ISO-7005-1 flanges are available.

Impeller

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

Drivers

Driver and pump are forming a complete unit. The standard design for these drivers are vertical flanged motors with special shafts and bearings. The material selected for the shafts is in accordance with the API 610, 9th Edition. The electric motors are in accordance with SHELL DEP Regulations and VIK design specifications.

Bearings

For this kind of vertical inline 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/casing cover will be tested to 1.5 times the maximum working pressure.

Direction of Rotating

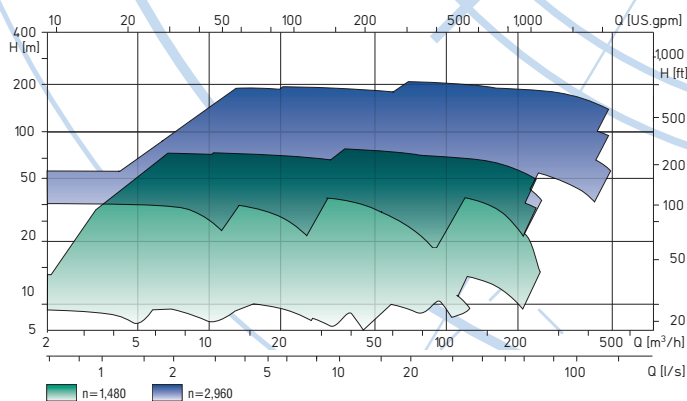
Clockwise viewed from the driver end.

The SPN charts are covering 19 pump models with several sets of impellers, especially designed for 50/60 Hz applications. Our continuous development process allows the extension

of the SPN program with tailor-made hydraulics to meet customer's requirements.

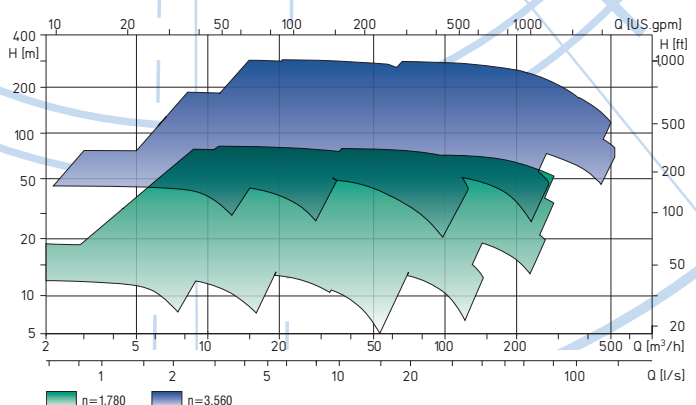
Selection Chart SPN

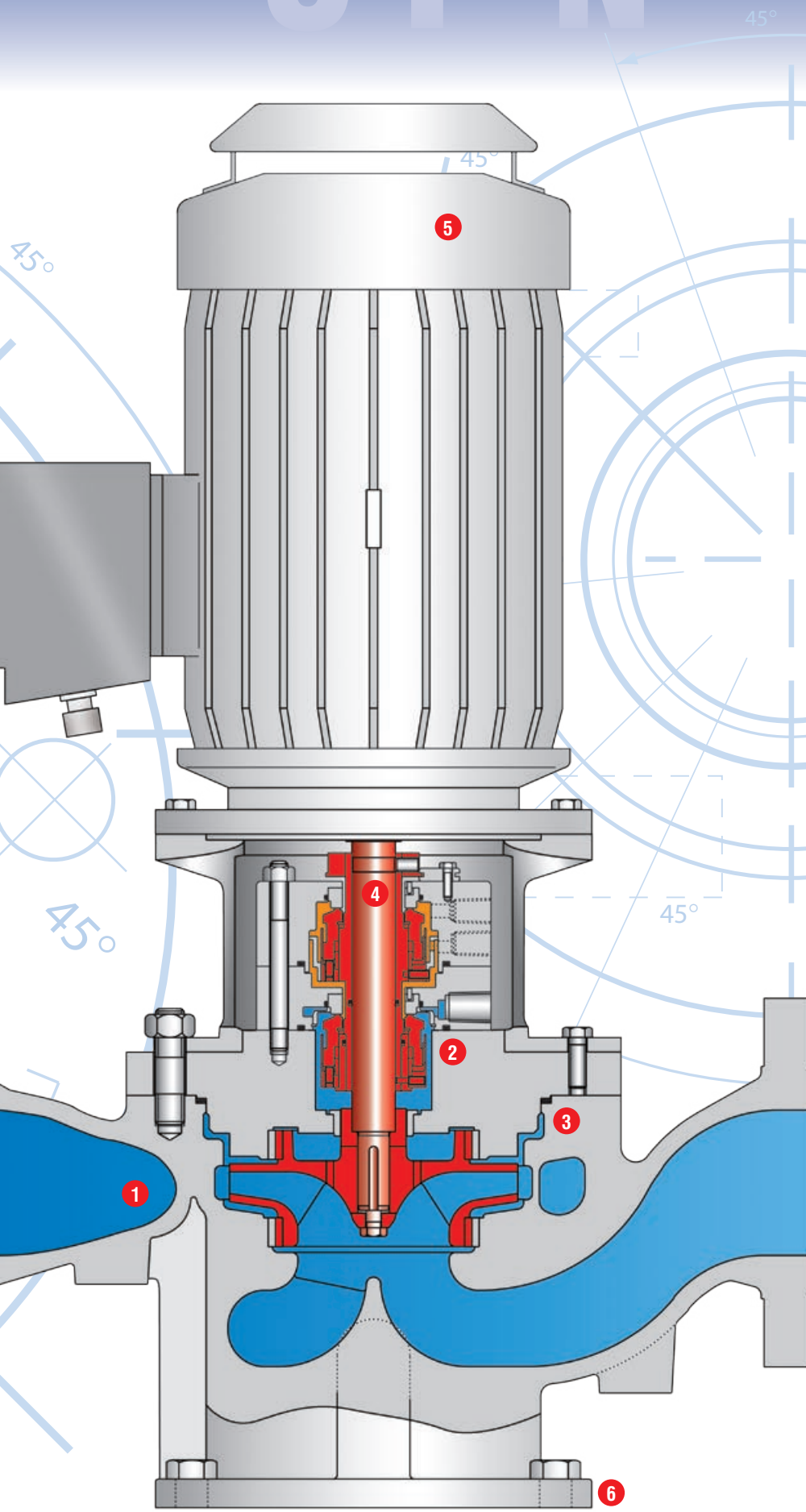
n = 1,480/2,960 rpm 50 Hz



Selection Chart SPN

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





SPN Design Characteristics

- 1 19 volute casing inline pump sizes for 50 Hz and 60 Hz power supply, in top pull out design from 1½" to 8" discharge nozzle, acc. to API 610, 9th Edition, BS 4082 and Shell DEP latest edition.
- 2 Mechanical seal chamber dimensions in full compliance with API 610 and API 682.
- 3 Casing/casing cover in metal-to-metal contact. Nonasbestos spirally wound gasket made of stainless steel/graphite foils totally enclosed.
- 4 Shaft deflection smaller than 0.03 mm in the area of the shaft seal because of proper selection of bearing sizes and through use of double volutes. Low vibration values will be achieved.
- 5 Antifriction bearings with a life time 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.

Centrifugal Pump SPN

Range Application

- Oilfields and Terminals
- Refinery Oils
- Transfer Systems
- Process Industry

Performance Range

Capacity	Q	up to 550 m ³ /h up to 2420 gpm
Head	H	up to 280 m up to 656 feet
Temperature	t	up to 260° C up to 500° F
MAWP	p	40 bar 580 psi
Speed	n	1480/3560 min ⁻¹

Higher speeds and heads on request

For over 50 years the name **RUHRPUMPEN** is synonymous world-wide with innovation and reliability for pumping technology.

45°



with innovations for the future

Other RUHRPUMPEN Products



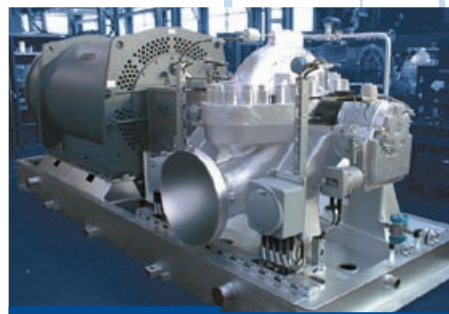
SVN Type API 610 Process Pump

Overhung OH2 Type, for service in an Ethylene Plant in Middle East.



ADC Type API 610 High Pressure Decoking Pump

Double Casing Barrel BB5 Type, Coke-Cutting Pump in a Refinery in South America.



ZM Type API 610 Pipeline Pump

Axially Split Single Stage BB1 Type, for Main Pipeline Pump operation in PR China.



ZMS Type API 610 High Pressure Pipeline Pump

Axially Split Two Stage BB3 Type, for Main Pipeline Pump operation in Middle East.



VLT Type API 610 Vertical Booster Pump

Vertical Double Casing (CAN) VS7 Type, for Booster Pipeline Pump operation in Near East.

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