

S M

**Heavy Duty, Axial Split Casing,
Multi-Stage, Between Bearings,
Horizontal Centrifugal Pipeline Pump**



Pipeline – and Injection Pump SM for Multipurpose Applications for High Pressures in Oilfields and Pipelines

The RUHRPUMPEN Type SM is a heavy duty, horizontal, axial split casing, volute type, multi-stage, centrifugal pump according to API 610, latest edition.

SM pumps with axial split casing are robust and reliable. Hydraulic balance is obtained by arranging the impellers in opposed groups. SM pumps are designed to withstand medium up to high pressure ranges. SM pumps are easy to inspect and maintain, due to the volute design which eliminates the need for guide vanes. The lower casing half will remain on the baseplate connected to the pipeworks during inspection and dismantling. This guarantees free access to the rotating assembly.

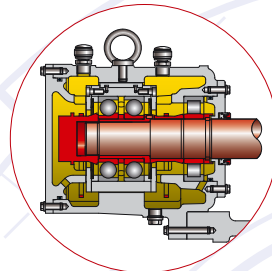
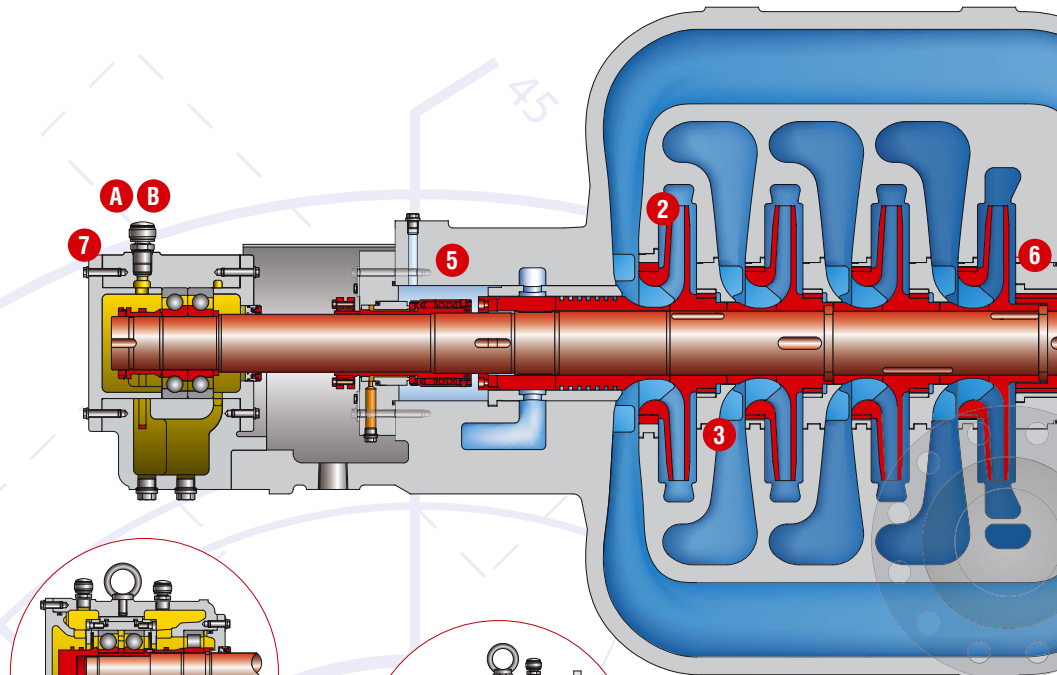
The suction and discharge nozzles have a side-side orientation, axially offset in the lower half casing.

The symmetrical execution of the upper and lower casing halves and a near centerline support ensures continuous and satisfactory operation even at high temperatures. Owing to intensive research and testing the SM pumps have high efficiencies and low sound pressure levels.

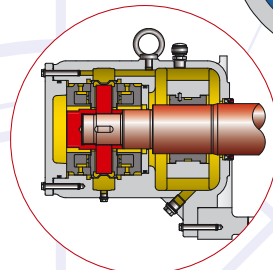
For low NPSHA applications a double suction first stage impeller is also available.

The DE and NDE stuffing boxes can both be subject to suction pressure. The pressure in both stuffing boxes can be reduced to suction pressure by user of a balancing line. The balancing line is flanged to the lower casing half.

All pressurized casing parts are hydrostatically minimum tested with 1,5 times the max. allowable working pressure.



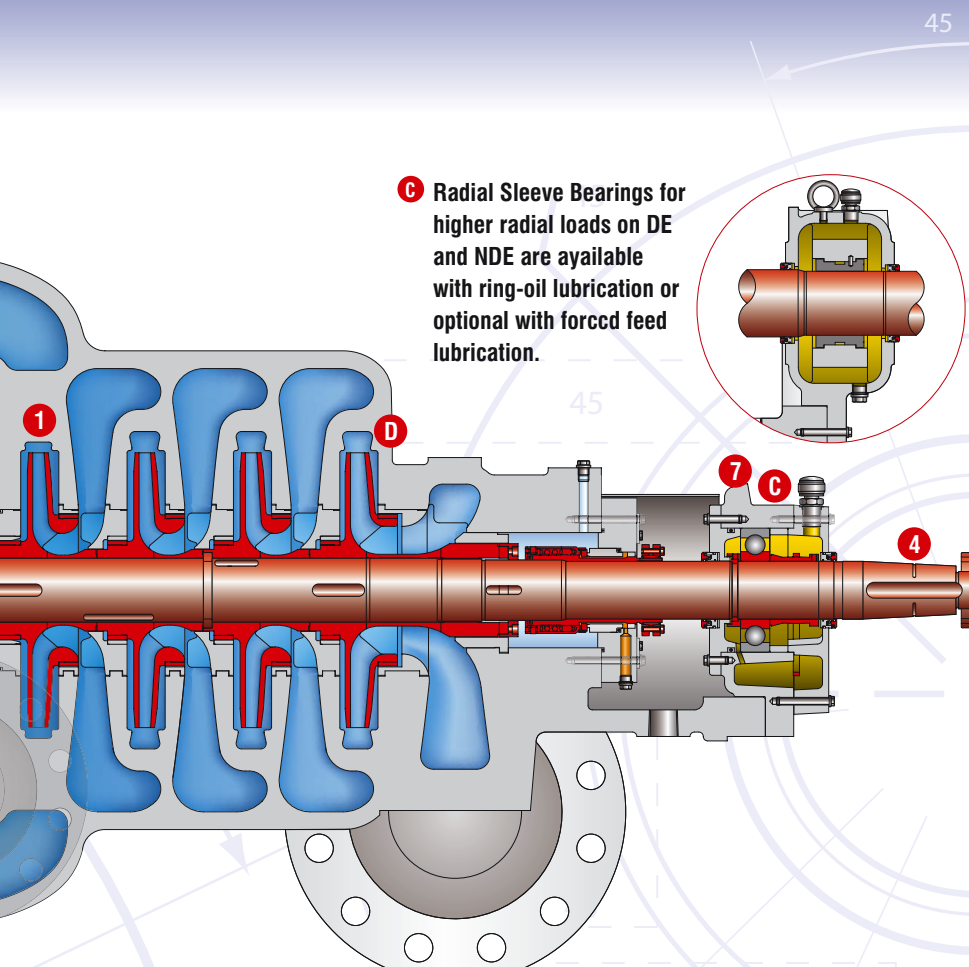
A Heavy duty Axial Thrust Bearing configuration especially developed for Pipeline services.



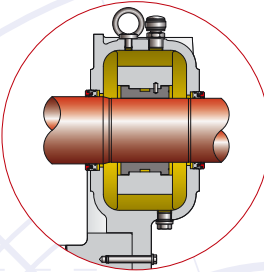
C Tilting Pad Thrust Bearing design with forced feed lubrication is available for high axial loads.

Centrifugal Pump SM

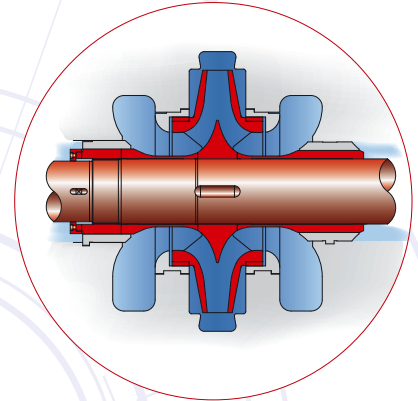
- 1** Axial Split Casing, full design pressure, double volute construction, hydraulically balanced, near centerline mounted. A balancing line equalizes the pressure in both seal chambers.
- 2** Precision cast, closed Impellers, dynamically balanced, individually secured against movement in either direction.
- 3** Replaceable Casing and Impeller Wear Rings, shrink fitted and secured by axial locking screws.
- 4** Large Shaft diameter, ample sized to satisfy stringent shaft dynamic and power transmission requirements, shaft ends tapered.
- 5** Seal chambers are in compliance with API 682 ready to accommodate single as well as tandem and double mechanical cartridge seals. Throttle bushing sized to balance axial thrust.
- 6** Center bushing sized to balance axial thrust for maximum rotor support and dampening.
- 7** Bearing Housings, with air cooled, finned surface and standard ring-oil lubrication. Pure or purge oil mist lubrication available on request. Bearing housing covers are equipped with INPRO® bearing isolators. Anti-Friction Bearings are standard, Sleeve/Anti-Friction and Sleeve/Tilting Pad configurations are optional.



C Radial Sleeve Bearings for higher radial loads on DE and NDE are available with ring-oil lubrication or optional with forced feed lubrication.



Special Impeller Design

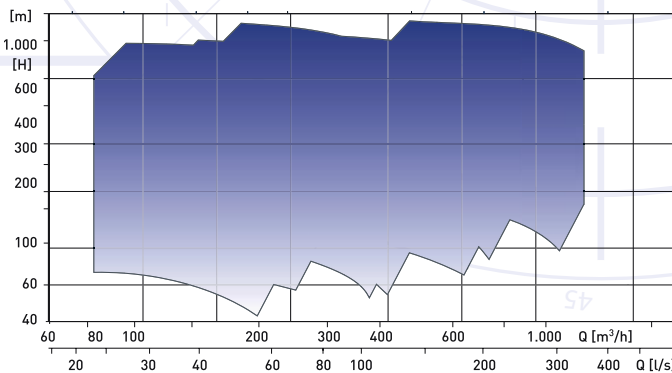


A Special Impeller Design: In case low NPSHR value is required, a double suction impeller for the first stage is available for most of the pump sizes.

The SM charts are covering 9 pump models with several sets of impellers, especially designed for 50/60 Hz applications. Our continuous development process allows the extension of the SM program with tailor-made hydraulics to meet customer's requirements.

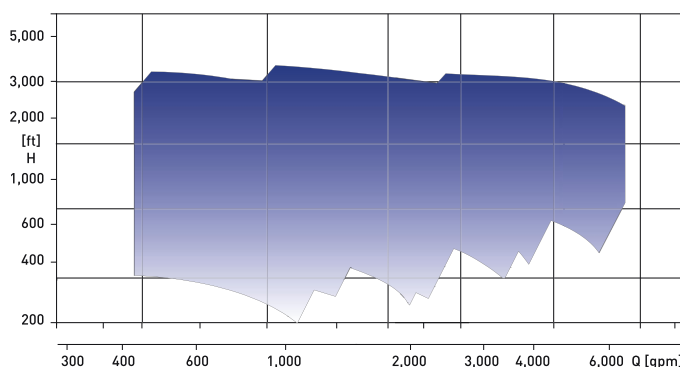
Selection Chart SM

n = 2960 rpm 50 Hz



Selection Chart SM

n = 3560 rpm 60 Hz



Centrifugal Pump SM

Range Application

- Oilfields and Terminals
- Crude Oil and Oil Product Pipelines
- Water Pipelines
- Fluid Injection
- High Pressure Services

Performance Range

Capacity	Q	up to 2000 m ³ /h up to 8800 gpm
Head	H	up to 1600 m up to 5330 feet
Temperature	t	up to 260 °C up to 500 °F
Speed	n	2980/3580 min ⁻¹

Higher speeds and heads on request

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



with innovations for the future

Other RUHRPUMPEN Products



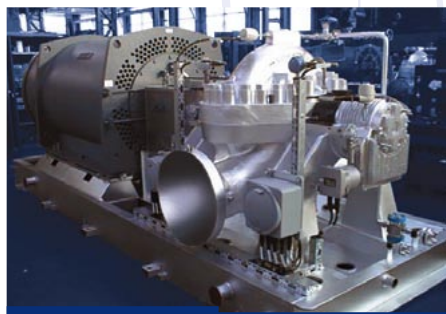
SVN8 Type API610 Process Pump

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



A Type API610 High Pressure Decoking Pump

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



ZM Type API610 Pipeline Pump

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



ZMS Type API610 High Pressure Pipeline Pump

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



VLT Type API610 Vertical Booster Pump

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

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