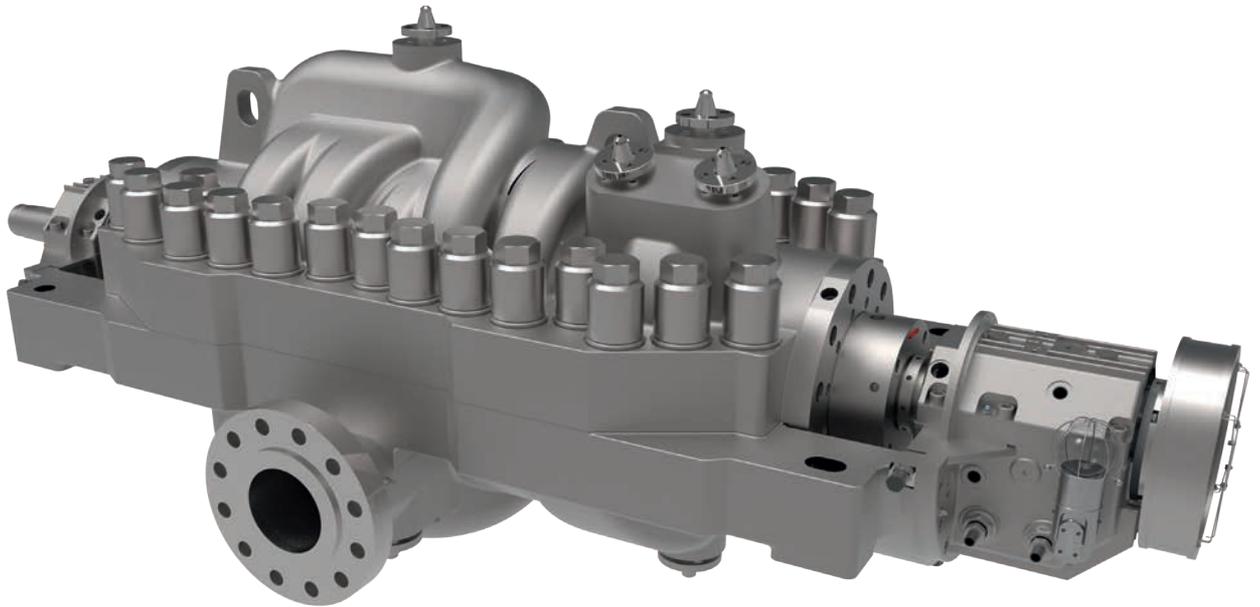


AXIALLY SPLIT, MULTISTAGE HIGH-PRESSURE PUMP

AMG

API 610 / TYPE BB3



- Easy maintenance without disconnecting the piping due to axial split casing
- Back-to-back rotor design to minimise axial thrust
- Optimum rotor dynamics for safe operation, also at high speeds
- Best NPSH values by optimally designed suction impellers
- Highest efficiency for energy saving operation

Range of Application

Based on the excellent hydraulic characteristics, the perfectly optimized performance range and modern structural design, the pumps are suitable for applications such as:

- applications in the oil and gas industry
- offshore applications
- water injection onshore and offshore
- applications in refineries
- booster applications in all industrial branches
- boiler feed water applications

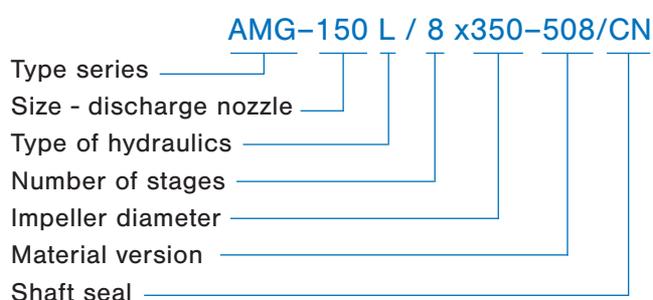
Design

- Horizontal, axially split between bearing pump
- Bearing types: antifriction bearings with ring oil lubrication
Mixed bearings: radial slide bearings, axial antifriction bearings with ring oil lubrication Radial and axial slide bearings with pressure oil lubrication
- Due to the axial split casing design, very short downtimes during maintenance and inspection work. Lower casing part remains in the pipeline. Dismantling of the coupling is not necessary.
- 1st stage with NPSH impeller as standard. Double suction impeller for even lower NPSH values optional
- Flanges according to ASME or DIN EN in different pressure ratings and flange facings
- Single impeller support and shrink fit impellers in reference to the application
- Double volute construction for minimum radial thrust, back-to-back impeller design for axial thrust compensation for optimised bearing and sealing life
- Casing with near centeline support
- High speed options available

Shaft Seal

Separate seal chamber, suitable for a variety of mechanical seals – from single and double mechanical seals up to cartridge mechanical seals and gland packing – all variants are available. Pumps of this have a standard design with cartridge mechanical seal. Assembly space according to API 610/682.

Designation



Operating data

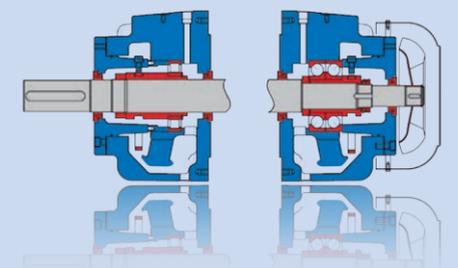
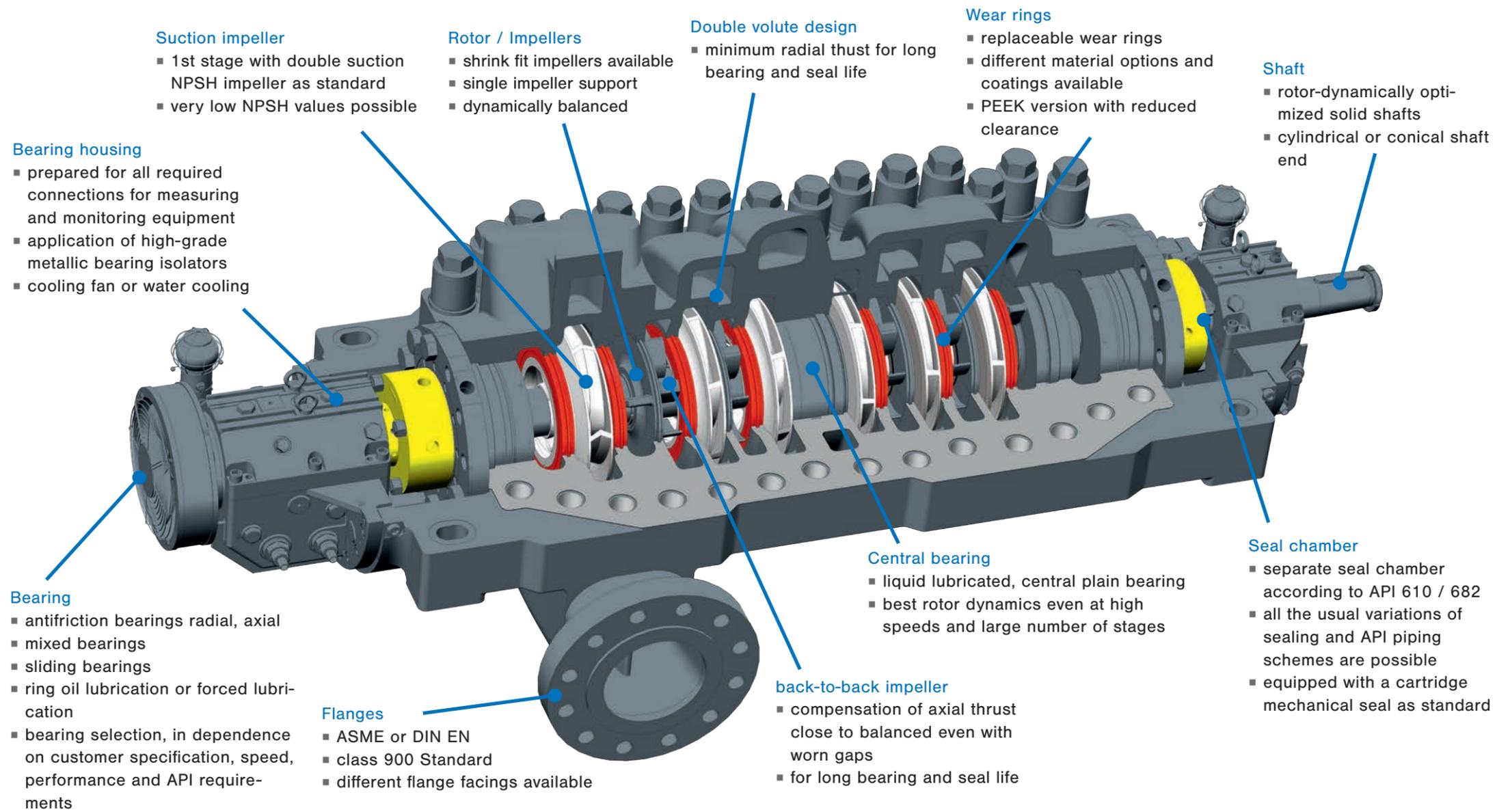
Nozzle size	80 up to 500
Capacity	up to 3200 m ³ /h
Head	up to 2200 m
Pressure design	up to 265 bar
Operating temperature	-50 °C to +200 °C

Materials

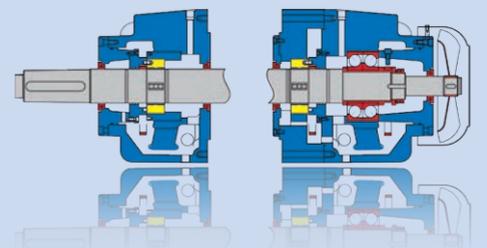
	S-5	S-6	C-6	A-8	D-1	D-2
Split Casing	Carbon steel	Carbon steel	12 % Chromium steel	316 AUS	Duplex	Super duplex
Impeller	12 % Chromium steel	12 % Chromium steel	12 % Chromium steel	316 AUS	Duplex	Super duplex
Shaft	12 % Chromium steel	12 % Chromium steel	12 % Chromium steel	Duplex	Duplex	Super duplex
Bearing housing	Carbon steel	Carbon steel	Carbon steel	Carbon steel	Carbon steel	Carbon steel

Materials according to API, NORSOK, NACE and special alloys are available.

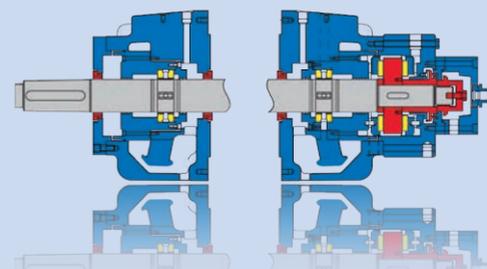




Antifriction bearings with oil-ring lubrication

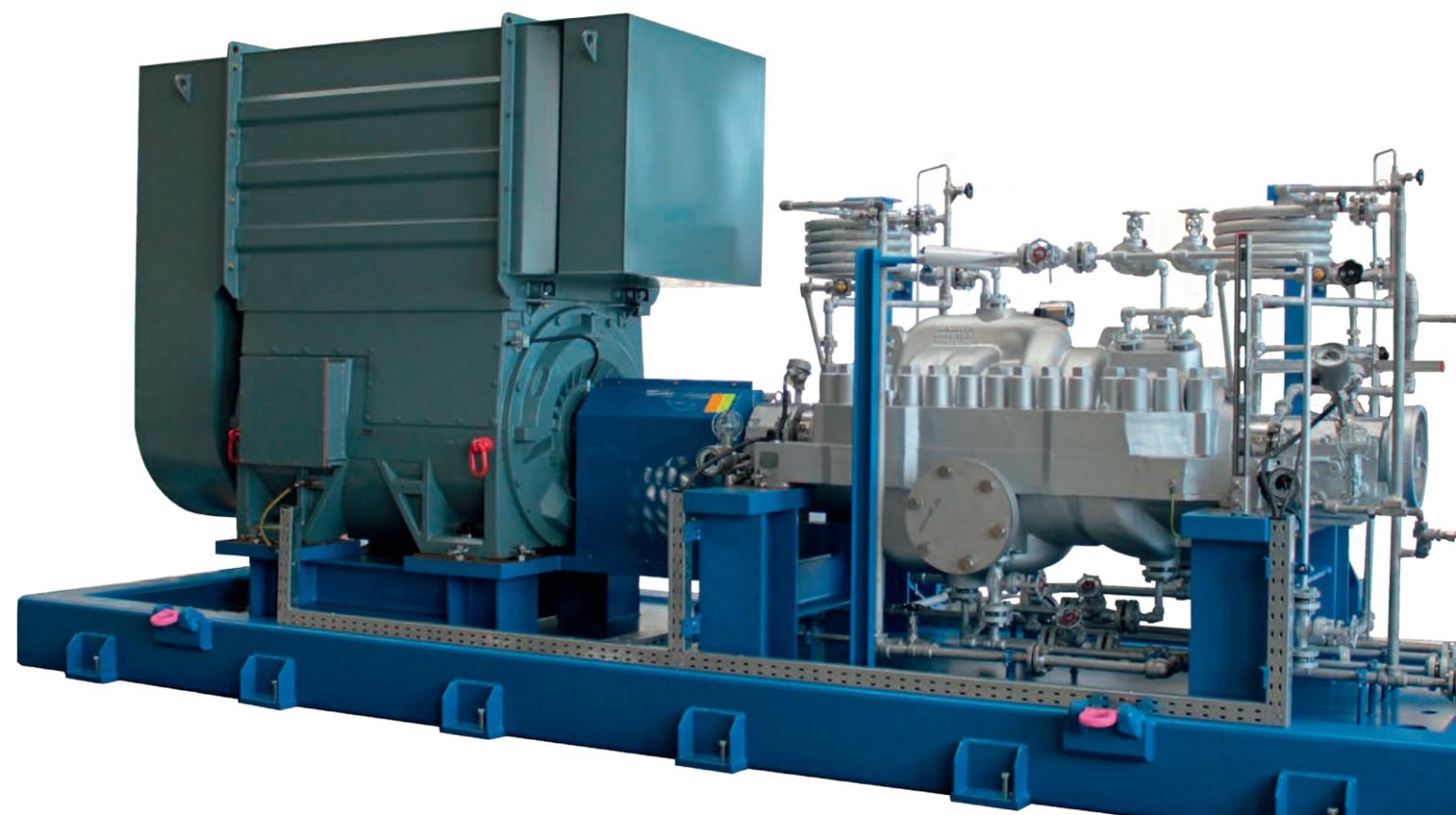
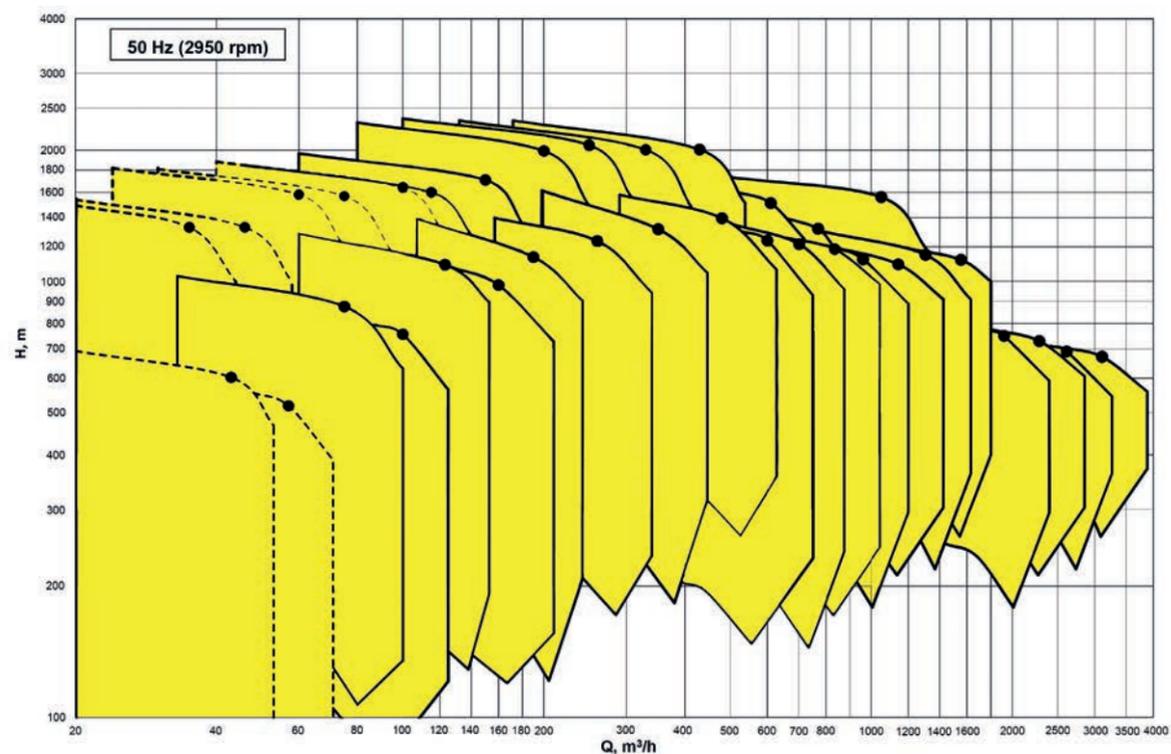


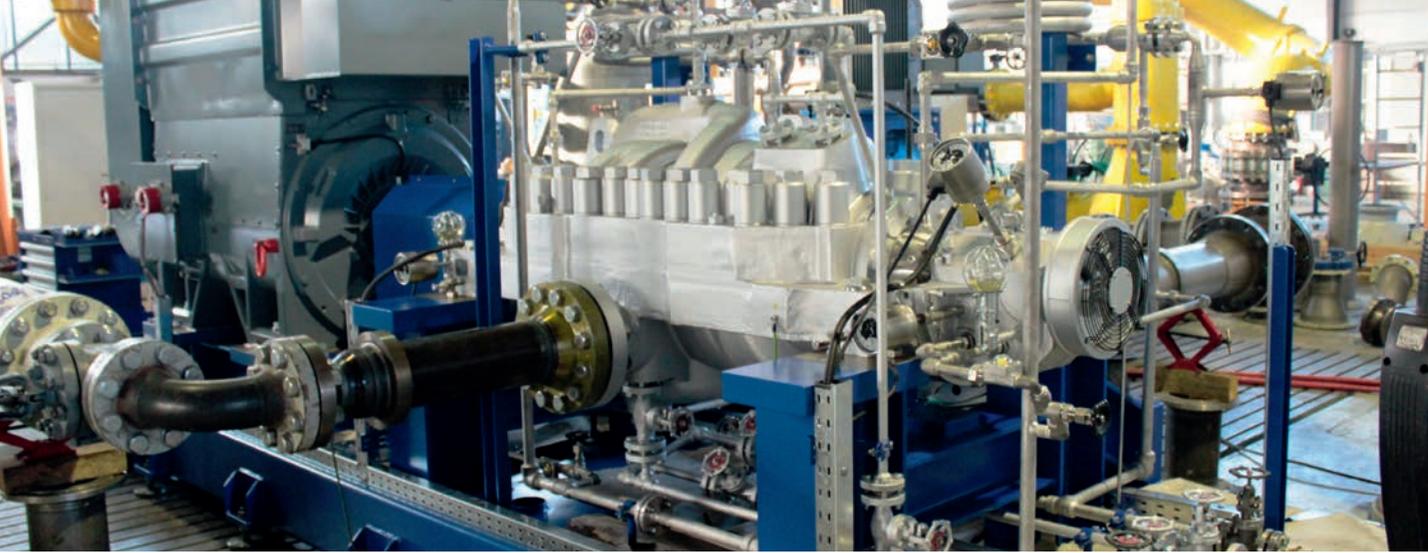
Mixed bearings: radial sliding bearings, axial antifriction bearings with oil-ring lubrication



Sliding bearings axial, radial with forced oil lubrication

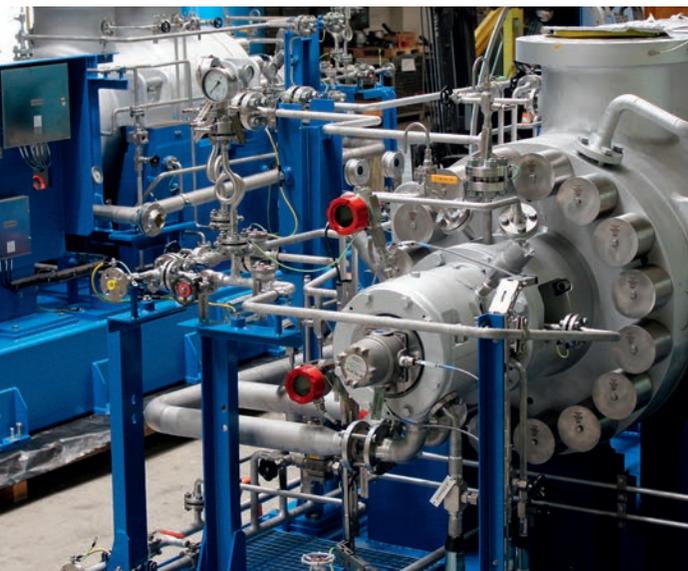
Performance range





Since more than 100 years APOLLO in Goessnitz has been developing and producing pumps for different applications with most different operating principles.

In continuation of this history Apollo has developed to a Manufacturer of high quality heavy-duty Process Pumps - especially according to API 610 Standard.



20 years ago, the business Division „System Engineering & System Technology“ was founded. With this division we can offer our Customers complete solutions from a single source. Apollo has high-skilled Personnel for Pumps and Pumping Systems up to Specialists for Electrical and Control Engineering. By taking advantage of these synergies, of short lines of communication, of optimized process chains

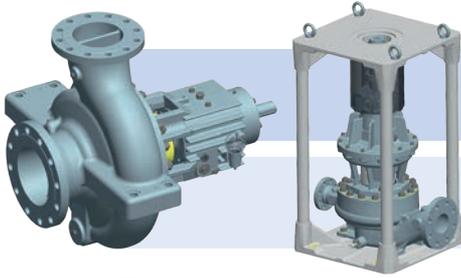
and of high Flexibility of our company, we provide our Customers with best support in solving their problems and tasks worldwide.

Our production methods and systems meet the highest level of quality and allow the implementation of orders according to different standards and regulations. The Quality Assurance in all areas of the company, including suppliers and cooperation partners, is the top priority and is consistently implemented. The most up-to-date test fields provide realistic test conditions.

Today we develop and manufacture with the most modern methods – from the hydraulic design over to 3D CAD design and engineering, FEM calculation to the casting patterns and parts manufacture via CAD-CAM Interfaces.

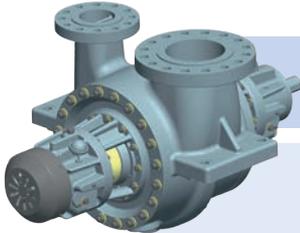


PROCESS PUMPS | API 610



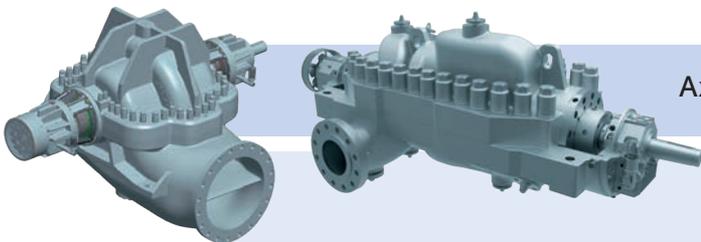
Single stage pumps: **OH1, OH2, OH3**

■ KRH ■ KRHA ■ KRHL / KRPO ■ KRP / KRPH ■ KRI / KRIL



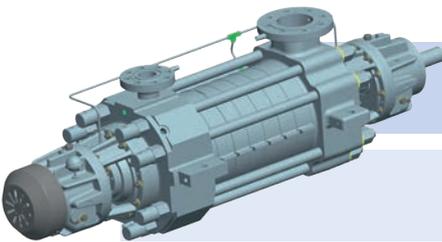
Single and two-stage between bearings pumps: **BB2**

■ ZPR ■ ZPRA ■ KGR / KGRD



Axial split between bearings pumps: **BB1, BB3**

■ ZMK ■ ZMKV ■ AMG



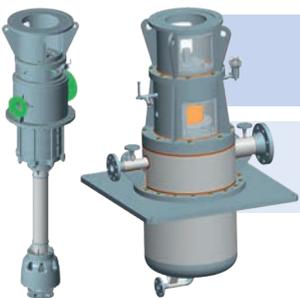
Multistage high-pressure pumps, ring sections type: **BB4**

■ HP ■ GP „back-to-back“ ■ GMHD



Multistage high-pressure barrel pumps: **BB5**

■ TL ■ TG „back-to-back“ ■ TGDX



Single and multistage, vertical pumps: **VS1, VS4, VS6**

■ HPTV ■ HPV ■ HPVX ■ GSTV