



Specialist for Pumping Technology

INNOVATION
EFFICIENCY
QUALITY



A-LINE

Horizontal Heavy Duty Barrel Pumps

For more than 60 years the name Ruhrpumpen™ has been synonymous worldwide with innovation and reliability for pumping technology

Ruhrpumpen is an innovative and efficient centrifugal pump technology company that offers a wide range of quality products to our clients. Ruhrpumpen is committed to global excellence with a complete range of Pumps, Fire Pump Packages and related products, such as Decoking Systems and Tools to support the core markets, namely Oil & Gas, Petrochemical, Power, Heavy Industry Applications, Mining and Water Services.

The broad product line complies with the most demanding quality specifications and goes beyond stringent industry standards such as API, ANSI, Hydraulic Institute, Underwriter's Laboratories, Factory Mutual and ISO 9001.

Ruhrpumpen is a vertically integrated company with its own foundry, machine shop, pump manufacturing plants and service centers. With strategically located manufacturing plants, operating offices and service centers in many parts of the world, Ruhrpumpen is truly a global pump company which also has the strength to focus on the local necessities of each client.

A Line Pumps

Our A-Line pumps are horizontal, radially split, multistage diffuser type pumps (BB5 configuration) engineered and manufactured to the latest edition of the ISO 13709 (API 610). The A-Line Pumps are available with either Inline or Back-to-Back Impeller arrangement. For ease of assembly and high overhaul times the cartridge element can be supplied as full-pull-out design.

A-Line pumps are generally in compliance with ATEX and the CE Machinery Directive and are designed for heavy duty applications, such as:

- Water Injection
- Hydraulic Decoking
- High-Pressure Applications
- Refinery / Boiler Feed
- Cogeneration
- Pipeline
- Amine / Ethylene Feed
- Hydrocarbon Charge

PERFORMANCE DATA

Capacity	up to 1,400 m ³ /h	6,160 gpm
Head	up to 4,200* m	13,776 ft*
Pressure	up to 450 bar	7,830 psi
Temperature	up to 450 °C	840 °F
Dis. Flange Size	50mm to 250mm	2" to 10"

For pump operations outside this range, please contact a Ruhrpumpen representative.

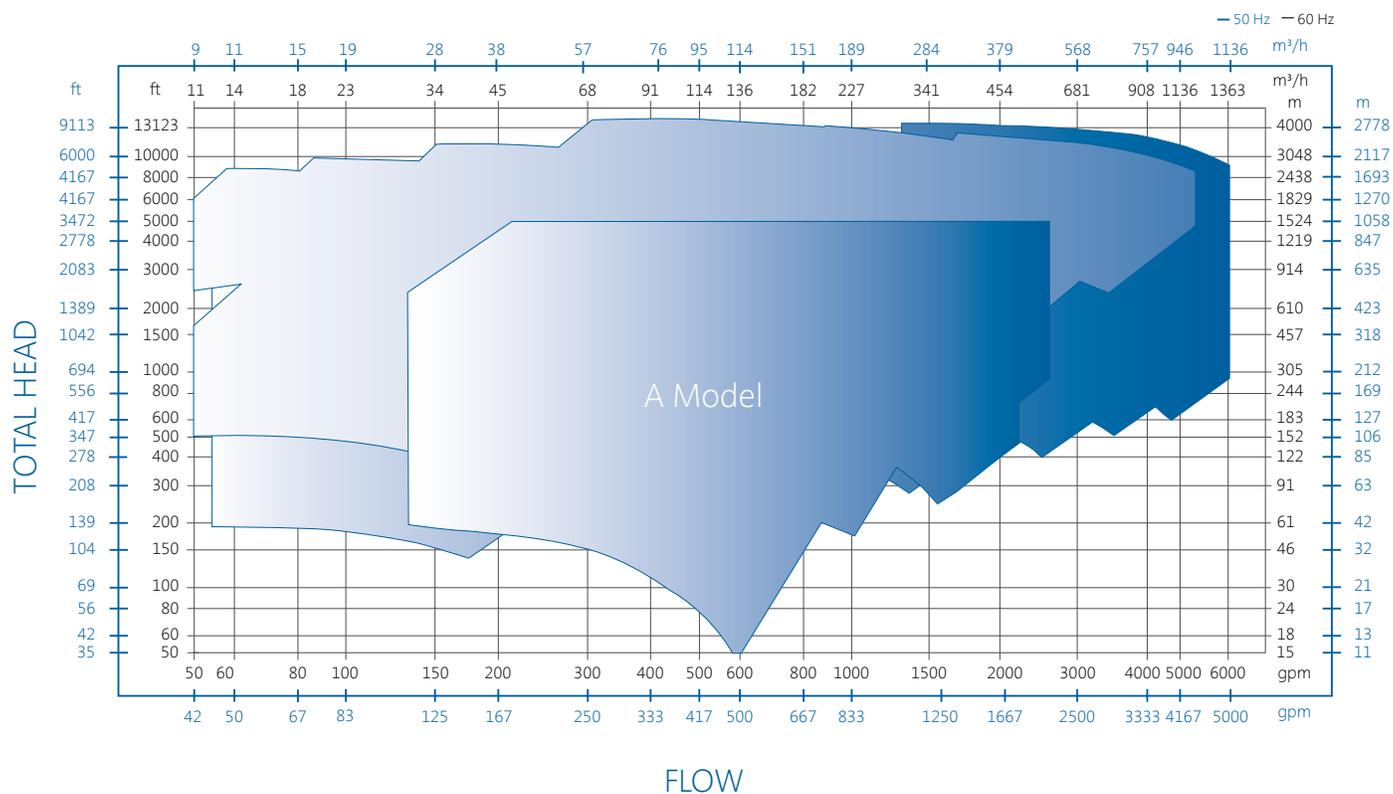


A- Line Barrel Pumps are suitable for almost every Oil & Gas application, including high-temperature and high-pressure services.

Performance Range

2 POLES

SELECTION CHART A-LINE

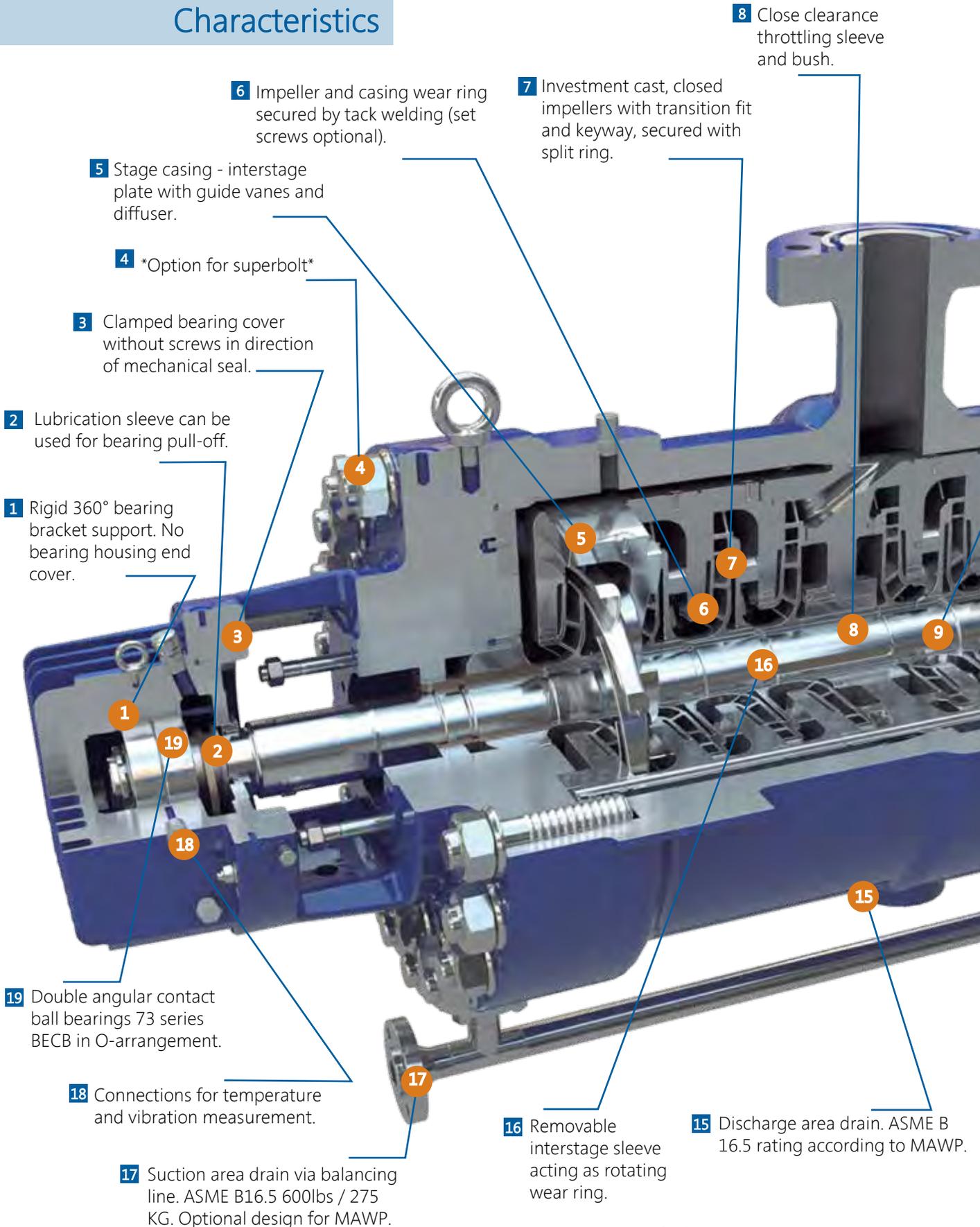


Materials of Construction

Material combinations per API 610 as standard. Other materials on special request.



Characteristics



BACK TO BACK

Horizontal Heavy Duty Barrel Pumps

Description

PRODUCT DESCRIPTION

Horizontal Heavy Duty Barrel Pumps.

- API 610 11th edition BB5.
- Horizontal multi-stage arrangement.
- Opposed Impeller Design
- Double-casing.
- Radially split.
- Barrel-type.
- Between bearings.
- Centerline mounted.
- Axial thrust compensation by opposed impeller design.
- Top-top or top-side suction and discharge nozzles.

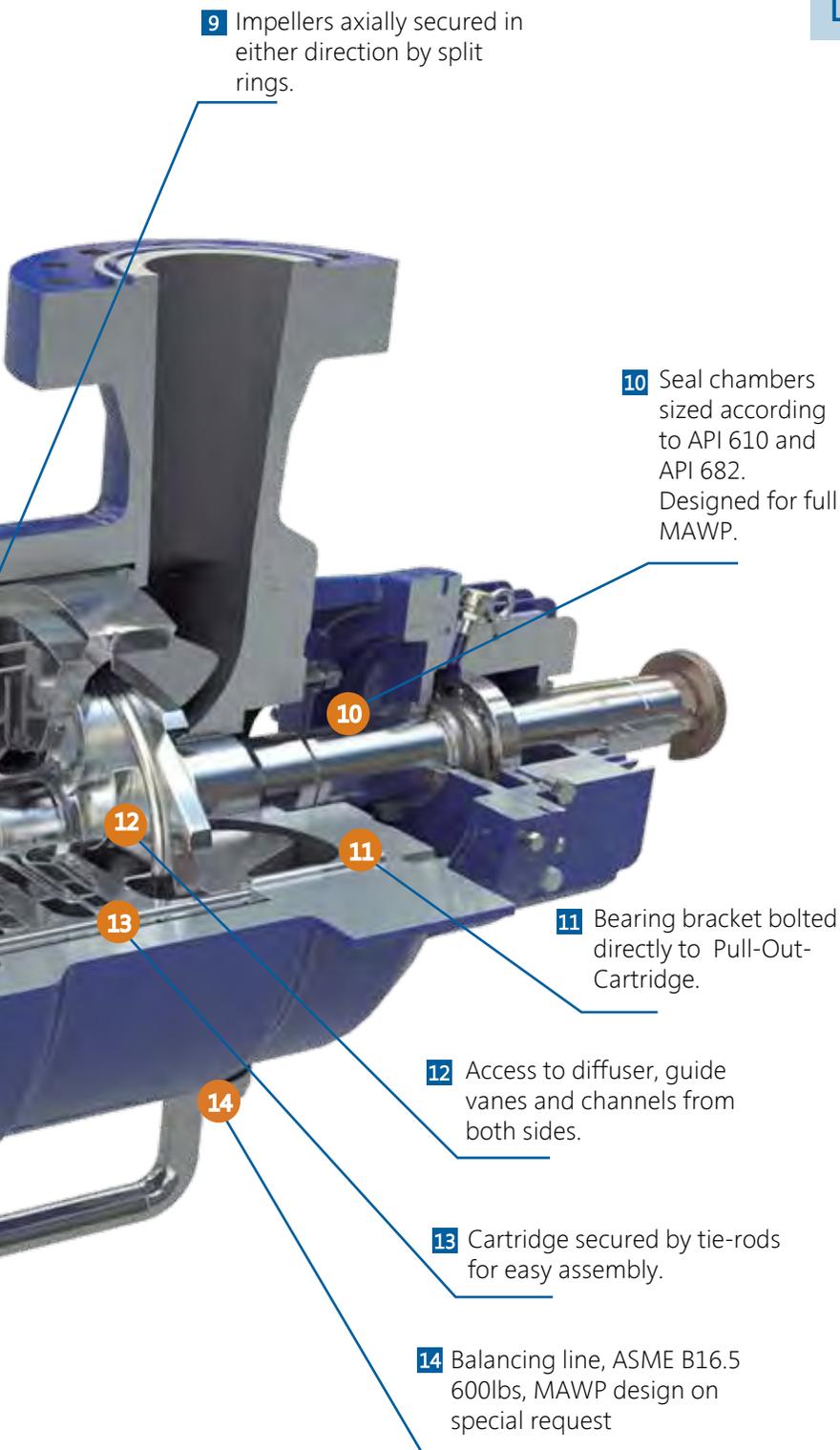
BENEFITS

- Material combinations per API 610 as standard. Other materials on special request.
- Modular design for small and large number of stages.
- “Blind”-stages for future upgrades available
- Cast and forged barrel available
- Standard or Full-Pull-Out cartridge available
- Stiff shaft design
- Thrust balancing by opposed impellers

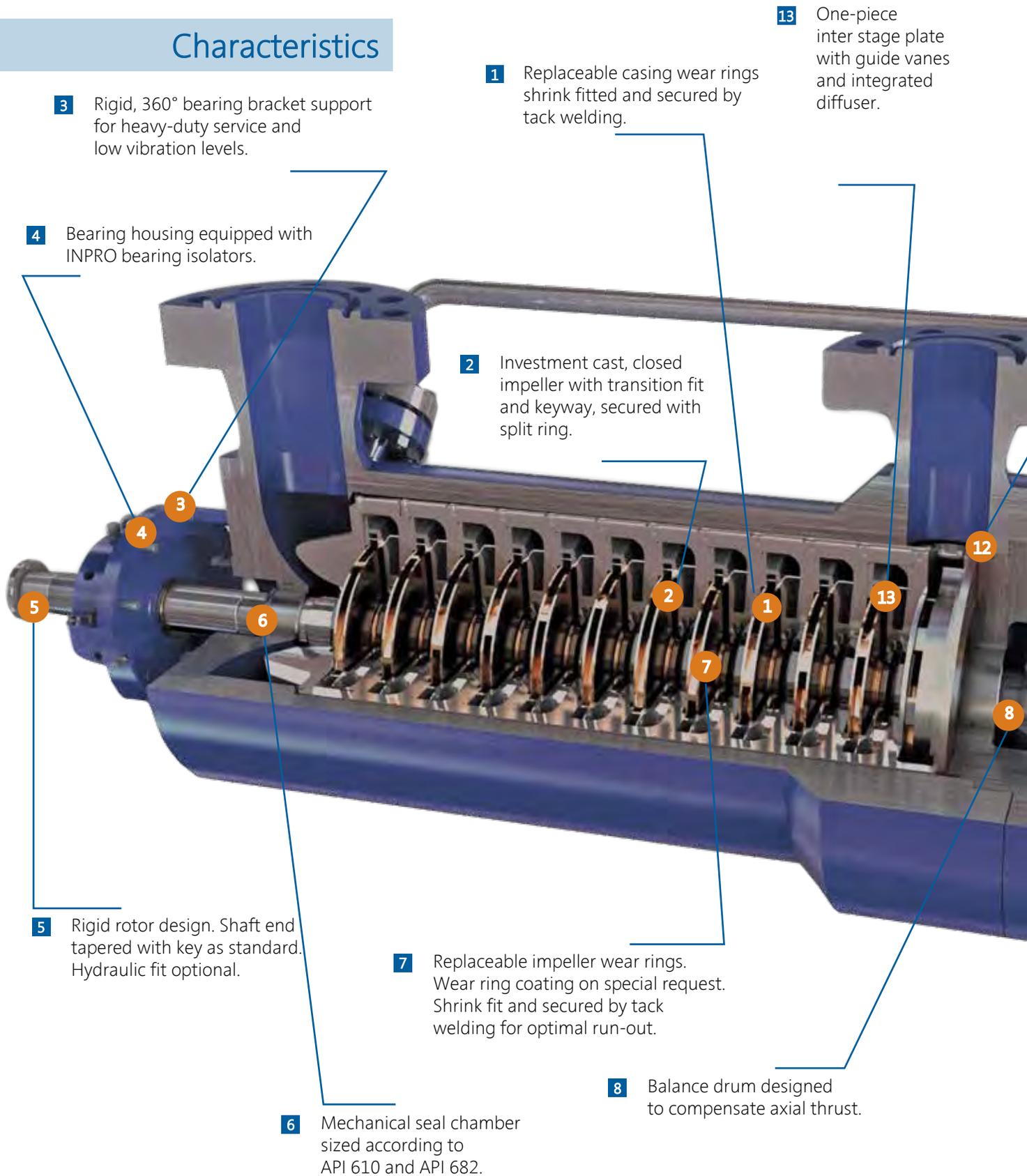
TYPICAL APPLICATIONS

The Ruhrpumpen back to back AB Model is designed for heavy-duty applications, such as:

- Water Injection
- High Pressure Applications
- Boiler Feed
- Cogeneration
- Pipeline
- Reverse Osmosis
- Amine / Ethylene Feed
- Hydrocarbon Charge



Characteristics



3 Rigid, 360° bearing bracket support for heavy-duty service and low vibration levels.

4 Bearing housing equipped with INPRO bearing isolators.

1 Replaceable casing wear rings shrink fitted and secured by tack welding.

13 One-piece inter stage plate with guide vanes and integrated diffuser.

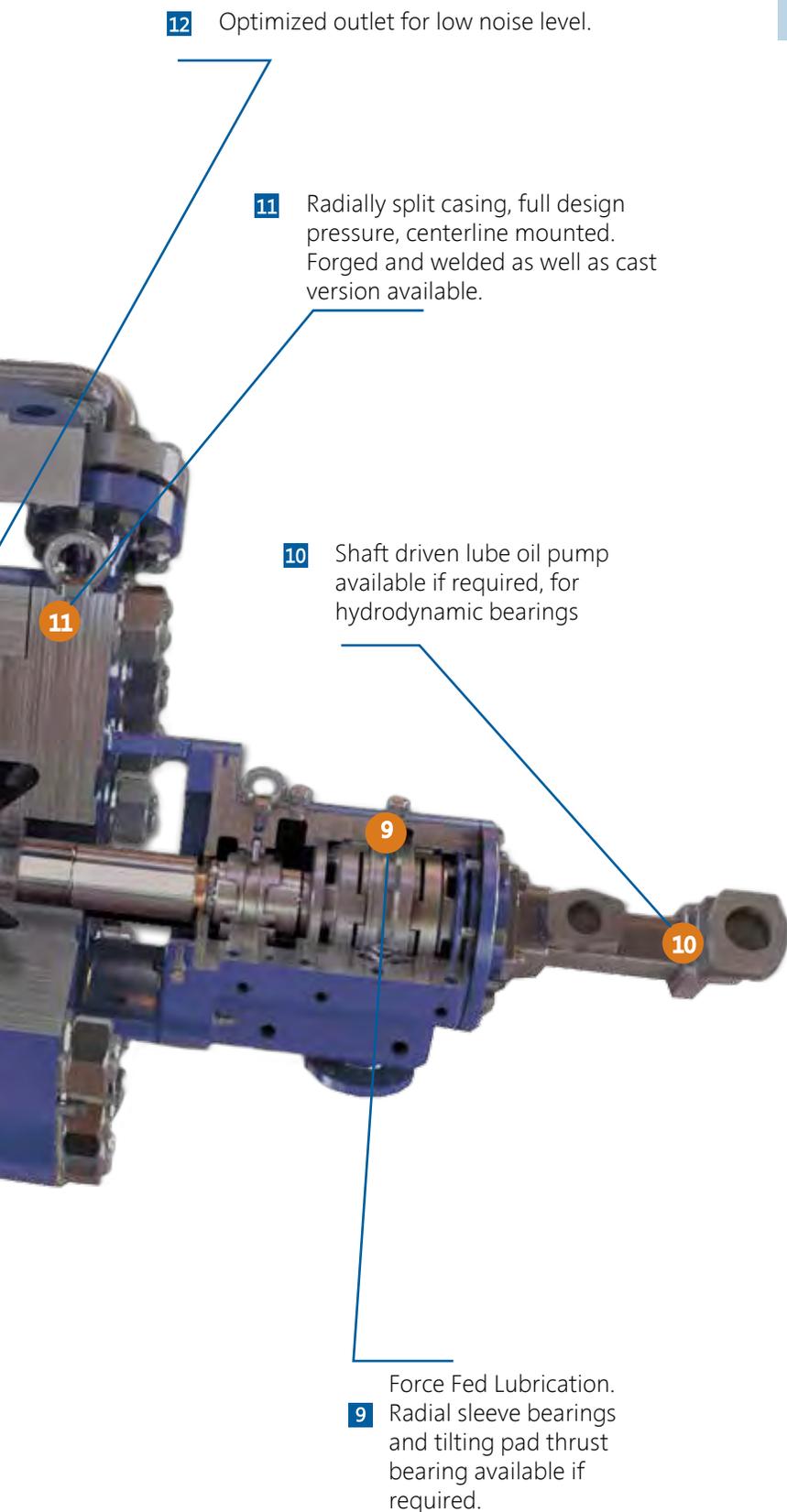
2 Investment cast, closed impeller with transition fit and keyway, secured with split ring.

5 Rigid rotor design. Shaft end tapered with key as standard. Hydraulic fit optional.

7 Replaceable impeller wear rings. Wear ring coating on special request. Shrink fit and secured by tack welding for optimal run-out.

6 Mechanical seal chamber sized according to API 610 and API 682.

8 Balance drum designed to compensate axial thrust.



12 Optimized outlet for low noise level.

11 Radially split casing, full design pressure, centerline mounted. Forged and welded as well as cast version available.

10 Shaft driven lube oil pump available if required, for hydrodynamic bearings

9 Force Fed Lubrication. Radial sleeve bearings and tilting pad thrust bearing available if required.

Description

PRODUCT DESCRIPTION

Horizontal Heavy Duty Barrel Pumps.

- API 610 11th edition BB5.
- Horizontal multi-stage with in-line impeller arrangement.
- Single suction impeller. Double suction on special request.
- Double-casing.
- Radially split.
- Barrel type.
- Between bearings.
- Centerline mounted.
- Centrifugal pump with axial thrust compensation by balancing drum.
- Top-top suction and discharge nozzles.

BENEFITS

- Material combinations per API 610 as standard. Other materials on special request.
- Modular design for small and large number of stages.
- “Blind”-stages for future upgrades available
- Cast and forged barrel available
- Standard or Full-Pull-Out cartridge available
- Stiff shaft design
- Stepped shaft and transition fit for easy maintenance
- Thrust balancing by balance drum

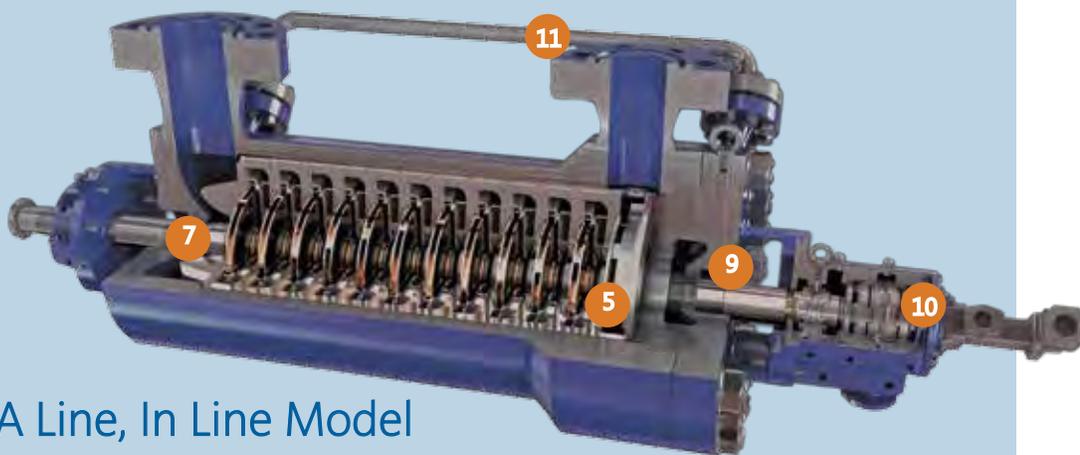
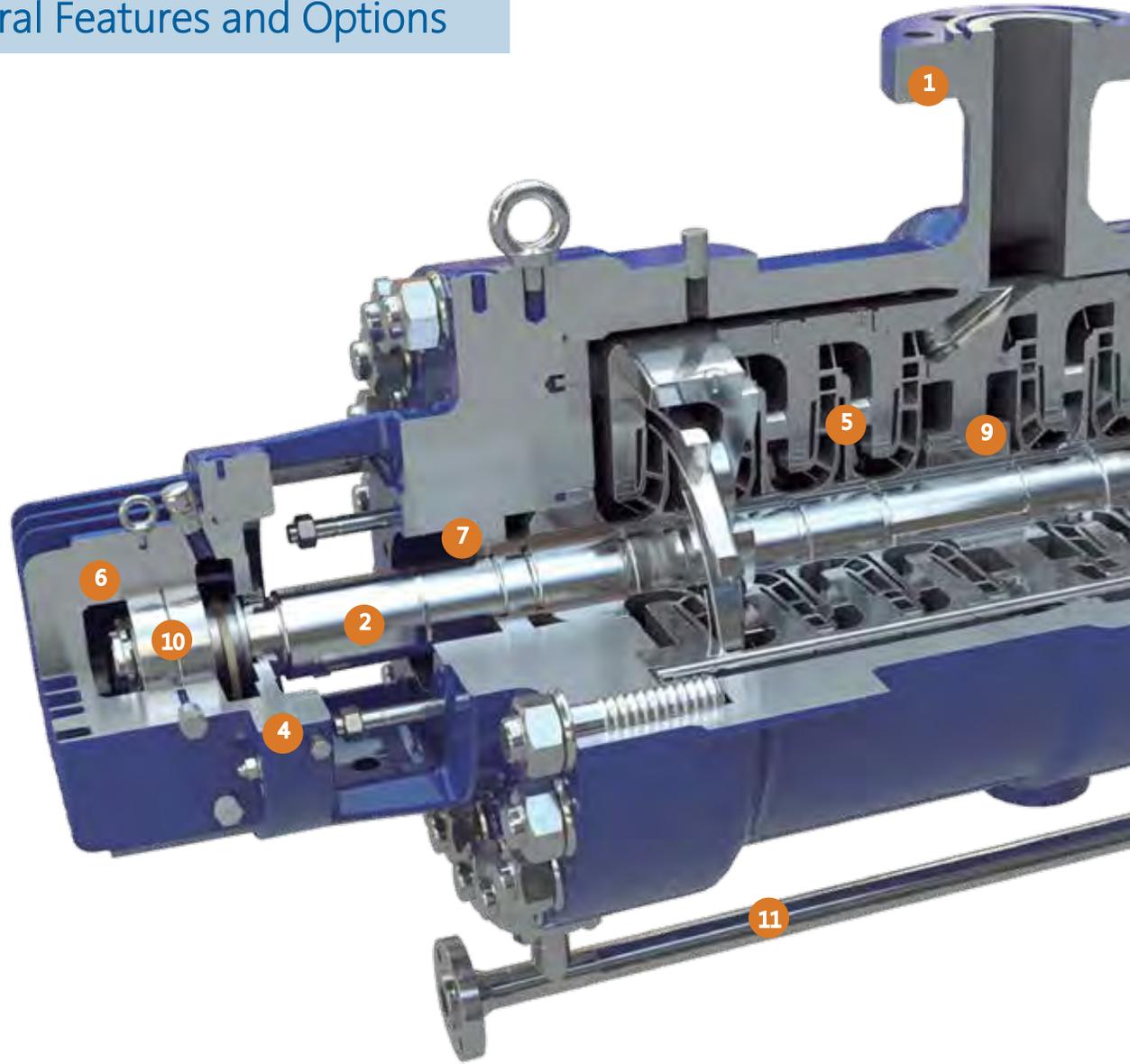
BROAD APPLICATION RANGE

The Ruhrpumpen In Line A Model is designed for heavy-duty application, such as:

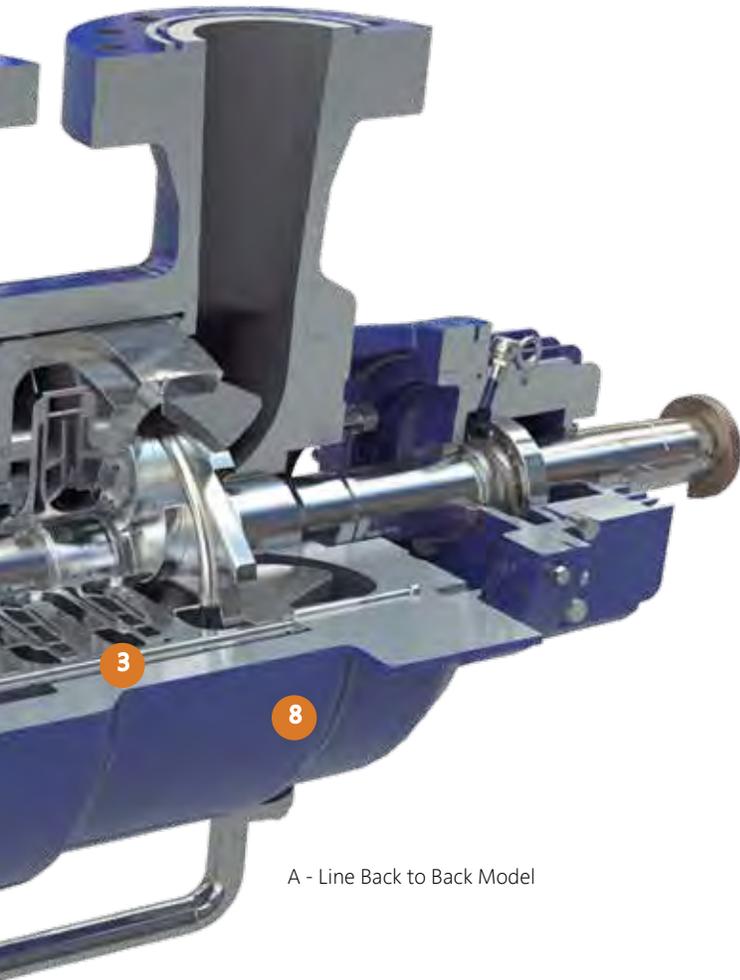
- | | |
|----------------------------------------------------------------|-------------------------|
| • Special Design for Hydraulic Decoking Applications Available | • Pipeline |
| • Water Injection | • Reverse Osmosis |
| • High Pressure Applications | • Amine / Ethylene Feed |
| • Boiler Feed | • Hydrocarbon Charge |
| • Cogeneration | |



A-Line General Features and Options



A Line, In Line Model



A - Line Back to Back Model

Features

A LINE MODEL

- 1 HEAVY DUTY PUMP CASING**
 - All flanges designed and rated for full maximum allowable working pressure and 2 x API 610 nozzle loads
 - Center-line mounted
- 2 HIGH ROTOR STABILITY**
 - Optimized
 - Dynamically-stiff design
 - High reliability for higher speed , low static deflection
- 3 EASE OF MAINTENANCE**
 - Cartridge can be removed from barrel casing as a complete unit
- 4 PUMP MONITORING**
 - Temperature and vibration monitoring of critical components as standard
 - Wired to skid edge junction box or control panel
- 5 PRECISION CAST IMPELLERS**
 - Statically and dynamically balanced
 - Shrink-fitted to shaft and individually axially located
- 6 BEARING HOUSING**
 - Easy access to mechanical seals and bearing
 - 360° mounting for optimum rotor support and low vibration levels
- 7 ADVANCED MECHANICAL SEALING (TO API 682)**
 - Cartridge style (single or dual) mechanical seals as standard
 - API 682 seal chamber ensures maximum seal life and full seal interchangeability
- 8 SPECIAL OPTIONS**
 - Super Duplex alloys and HVOF overlays
 - NACE and NORSOK design
- 9 HYDRAULIC BALANCING DEVICE**
 - Drum to balance hydraulic thrust loads
 - Back to Back impeller design
- 10 BEARINGS**
 - Ball or Sleeve / Ball bearing option available with ring-oil lubrication
 - Hydrodynamic double acting tilting pad (thrust) bearing
 - Hydrodynamic sleeve (journal) bearings
 - Force fed lubrication
- 11 BALANCE LINE**
 - Suction pressure in suction and discharge seal chamber

Main Features and Options

A MODEL - INLINE DESIGN

- Forged or cast barrel available
- Balancing drum takes axial thrust load
- Short builds and small number of stages possible
- Hydrodynamic bearings with force fed lubrication available
- Antifriction bearings with ring oil lubrication available
- Optimal selection for direct drive applications

AB MODEL - BACK TO BACK DESIGN

- Forged or cast barrel available
- Balancing of axial thrust load by opposed impeller arrangement
- Up to 16 stages available
- Antifriction bearings with ring oil lubrication
- Fan cooling available
- Hydrodynamic bearings with force fed lubrication available
- Optimal selection for direct drive applications
- Higher drive speeds available with gear or VFD

ADC MODEL - DESIGN FOR DECOKING SYSTEMS

- Special design for the highly demanding operating conditions of Decoking System Jet Pumps.
- Forged and cast barrel available
- Inline and Back-to-Back arrangement available

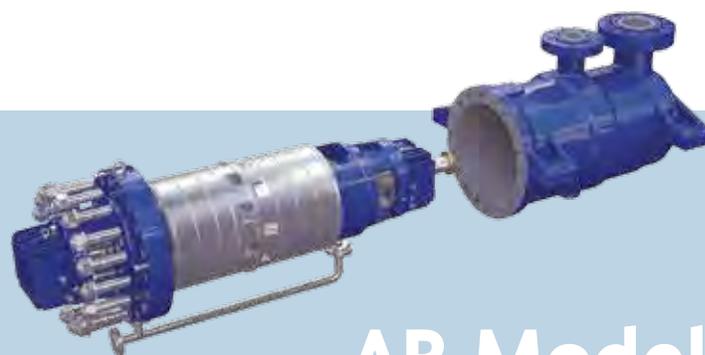
A LINE GENERAL FEATURES AND OPTIONS

- Double suction first stage available
- Standard balancing to grade G2.5 - G1.0 on special request
- Drivers can be electric Motors, Turbines or Combustion Engines
- Speed regulation by API compliant gear boxes, Variable Frequency Drives and variable speed fluid couplings
- API 682 latest edition single, tandem or double seal arrangements. Pressurized or unpressurized seal supply systems.
- Lubrications systems per API 610 and API 614 chapter 2 or 3.
- Heavy duty flexible disc coupling - also acc. to API 671. Straight bore, keyed tapered bore or hydraulic fitted tapered bore available
- Heavy duty baseplate design per API 610. Special designs e.g. for offshore applications with 3 or 4 feet mounting with AVL's or Gimbals available.
- Wide range of conditions monitoring instruments available

Full Pull Out Version

AB / ADC Models

The assembled cartridge can be quickly removed as one piece and reinstalled just as fast.



AB Model

Other Ruhrpumpen Products



Horizontal Process Pump Single Stage with Permanent Magnetic Drive

Heavy duty centrifugal process pump with permanent magnetic drive, API 685 pump standards, horizontal overhung, single stage, radially split, end suction.

Petroleum Refining, Production and Distribution, Petrochemical, Refineries, Heavy-duty Chemical, Gas Industry Services, Power Plants and Utilities.



Multi Stage Axially Split Casing Pump

Near-centerline mounted, Double volute casing, single or double suction, radial, closed impeller. Heavy duty process design according to API 610 latest edition (type BB3).

Fluid Injection, Oil Fields & Terminals, Water, Crude Oil & Oil Product Pipelines and Power Plants.



End Suction Fire Pump

Single-stage, radially split casing with flanged connections, enclosed impeller, foot mounted.

Petrochemical, Oil & Gas, Steel Industry, Automotive, Power Generation, Water Treatment, Pharmaceutical and General Process.



Vertical Barrel Pump

Low NPSH "Shockless Entry" first stage impeller (single or double suction), Single or multi-stage. Standard construction materials according to API 610 latest edition (type VS6).

Condensate, Power Plants, Municipal, Hydrocarbons, Pipeline and Refineries.





RUHRPUMPEN PLANTS

-  USA, Tulsa & Orland
-  MEXICO, Monterrey
-  BRAZIL, Rio De Janeiro
-  ARGENTINA, Buenos Aires
-  GERMANY, Witten
-  EGYPT, Suez
-  INDIA, Chennai
-  CHINA, Changzhou

More Information:

