



BB2 Series

Technical Catalogue

2015



Our Vision

ASK's vision is to be a recognized leader in innovative, sustainable, engineered, and customer-focused solutions for performance critical applications in the oil and gas, hydrocarbon processing, power generation, pulp and paper, and other selected industries.

Our Mission

ASK aims to be a multi-industry company with a strong brand, which provides solutions that combine products, services, engineering, and customer-application expertise.

The corporation is close to the customer by being direct –sales driven.

Engineering, innovation, and technology are cornerstones.

ASK strives to be an attractive employer and to create an environment where employees can excel. The company focuses on creating value for its customers.

ASK Innotec

The research and development unit of ASK supports the other divisions of the company and industrial companies in their development projects by providing a contract including research and special technical services like diagnostics and certified testing as well as one-off production and engineering. ASK innotec has expertise in materials and surface engineering, fluid technology, as well as in mechanics. Its core competencies in research contract also lie in these classical disciplines.





Product description

Using modern computer aided design methods, the pumps are specially designed as heavy duty, minimal wear, long life pumps which have been designed in a modular way, with a number of options available, to ensure full compliance to the customers' exact requirements and specifications. A fully compliant API 610 heavy duty baseplate helps achieve low vibration and noise levels which in turn extends the pump's life and ensures maximum running time. A 'space saving' reduced footprint is also available for use where space is at a premium.

The pumps can be fitted with a variety of proprietary components (i.e. seals, motors & couplings) from all the major manufacturers to cater for customers site preferences. Double mechanical seal arrangements can be fitted with an attached seal support system. This can be supplied by Seal Support System which is designed and manufactured by ASK, or another manufacturer's seal support system can be fitted.

To complete the package a full range of standard material options from SG iron and stainless steel, to duplex are available to match your process fluid. NACE compliant materials are also available. Standard documentation packs including manufacturing data books, material certification, and installation & operating manuals are available to suit the application. Performance testing to API610 / ISO 13709 and various NDE (nondestructive examination) & NDT (nondestructive testing) options are offered to ensure full compliance to our customers' applications. Alternative bespoke package can be tailored to fit your exact requirements.

Fields of Application

ASK pumps, BB2 series, are designed upon hard or heavy duty pumping conditions, for pumping clean or slightly contaminated water, oil, liquefied gas, hydrocarbon, etc.

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BB2 pumps are suitable for:

- Refineries
- Petrochemical plants
- Gas processing
- Coal processing
- Power plants
- Heat servicing system
- Offshore installation



Key features

- BB2 double stage foot mounted centrifugal pumps
- 60 bar pump to API 610 (11th edition) & Atex compliant
- -15°C to 400°C temperature applications
- Back-to-back impellers
- Radially split center-supported casing
- Double volute design
- Top suction, top discharge nozzles with same pressure grade
- A range of alloys available on request including NACE compliant materials
- Tested to API610/ISO13709 procedures – Head, Flow, Noise & Vibration
- A range of API682 seals & systems (PED compliant)
- Grouted and Non-grouted base plates to API610 dimensions

Product Overview

General description

A range of BB2 between bearings two-stage radially split horizontal centrifugal pumps manufactured in a variety of alloys

Construction	Heavy duty modular design, maximizing flexibility to suit customers application
Design methodology	Advanced computer techniques including 3D modeling, FEA & CFD
Design standards	API610 11th :2010 / ISO13709:2009 ATEX EC-Directive 94/9/EC
Design pressure rating	Up to 60 bar g @ 20°C
Suction pressure rating	Up to 20 bar g (Heavy duty construction)
Temperature rating	-15°C to 150°C (Standard construction) -15°C to 400°C (Heavy duty construction)
Design temperature	150°C
Flow rate	Up to 1500 m3/h
Differential head	Up to 400 m
Speed	Up to 3000 rpm
Configuration	Long coupled pump Bare shaft pump Rotating assembly
Discharge size	Up to DN300
Design life	20 years (3 years uninterrupted operation)



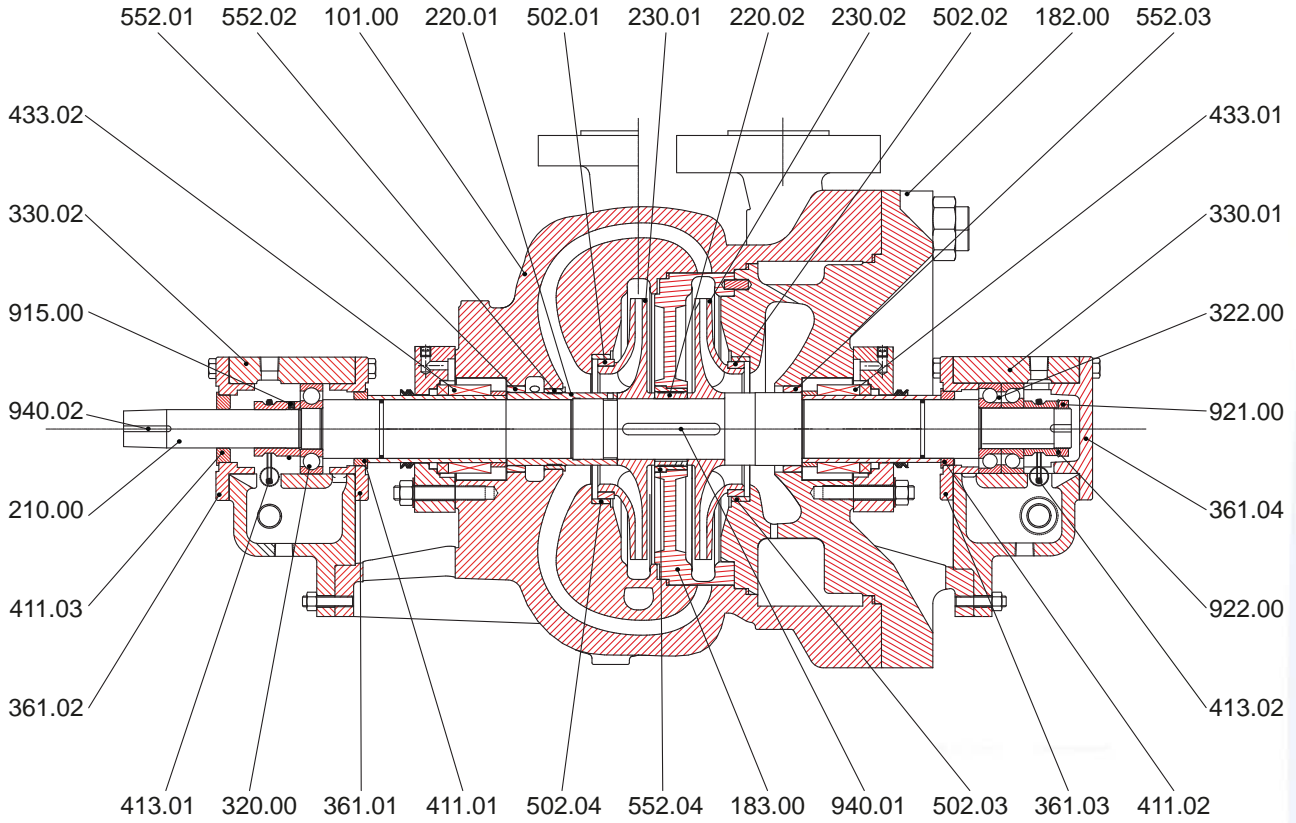
Material Options

Materials	Casing	Impeller
I1 - Cast Iron / Cast Iron	ASTM A 48 Class 40B	ASTM A 48 Class 40B
I2 - Cast Iron / Bronze	ASTM A 48 Class 40B	C92200
S1 - Carbon Steel / Cast Iron	ASTM A 216 WCB	ASTM A 48 Class 40B
S3 - Carbon Steel / Ni-resist	ASTM A 216 WCB	ASTM A 435 Type 1,2,3
S4 - Carbon Steel / Cast Iron	ASTM A 216 WCB	ASTM A 48 Class 40B
S5 - Carbon Steel / Carbon Steel	ASTM A 216 WCB	ASTM A 216 WCB
S6 - Carbon Steel / 12% Cr SS	ASTM A 216 WCB	CA6NM
S8 - Carbon Steel / SS 316	ASTM A 216 WCB	ASTM A744 CF-3M
C6 - SS 304 / SS 304	304 Stainless steel	304 Stainless steel
A8 - SS 316 / SS 316	ASTM A744 CF-8M	ASTM A744 CF-8M
D1 - Duplex SS / Duplex SS	EN10213-4 / 1.4517	EN10213-4 / 1.4517

- Other alloys, including NACE compliant materials are available on request
- We offer specific NDT and component documentation to ensure compliance to your exact requirements.



General Sectional Drawing



Part name	Part No.	Part name	Part No.
Casing	101.00	Bearing housing seal	411.03
Suction piece	182.00	Oil ring	413.01
Casing spacer	183.00	Oil ring	413.02
Shaft	210.00	Mechanical seal	433.01
Shaft sleeve	220.01	Mechanical seal	433.02
Impeller sleeve	220.02	Impeller wear ring	502.01
Impeller	230.01	Impeller wear ring	502.02
Impeller	230.02	Casing wear ring	502.03
Deep groove BB.	320.00	Casing wear ring	502.04
Angular contact BBs.	322.00	Throat bushing	552.01
Bearing housing	330.01	Throat bushing	552.02
Bearing housing	330.02	Throat bushing	552.03
Bearing housing cover	361.01	Throat bushing	552.04
Bearing housing cover	361.02	Set screw	915.00
Bearing housing cover	361.03	Lock nut	921.00
Bearing housing cover	361.04	Lock nut washer	922.00
Bearing housing seal	411.01	Parallel key	940.01
Bearing housing seal	411.02	Parallel key	940.02

Product benefits

- Suitable for application requiring high suction pressure
- 3mm corrosion allowance to API610
- Nozzle forces and moments 2 x API
- Exchangeable impeller and case wear rings. Clearances according to API 610, latest edition.
- Double volute design minimizes hydraulic radial loads
- Heavy duty shaft design and bearing support
- Impeller trimmed to match the specified duty point
- Smooth operation with low vibration levels due to dynamic balancing both of the individual impellers and the complete rotor.
- Axial thrust compensation by back-to-back arrangement of impellers
- Several hydraulic systems per pump size
- Fits for mechanical seals as per ISO 24109 / API 682 in cartridge design for easy installation and removal
- Rotor removable without dismantling the piping for Ease of maintenance

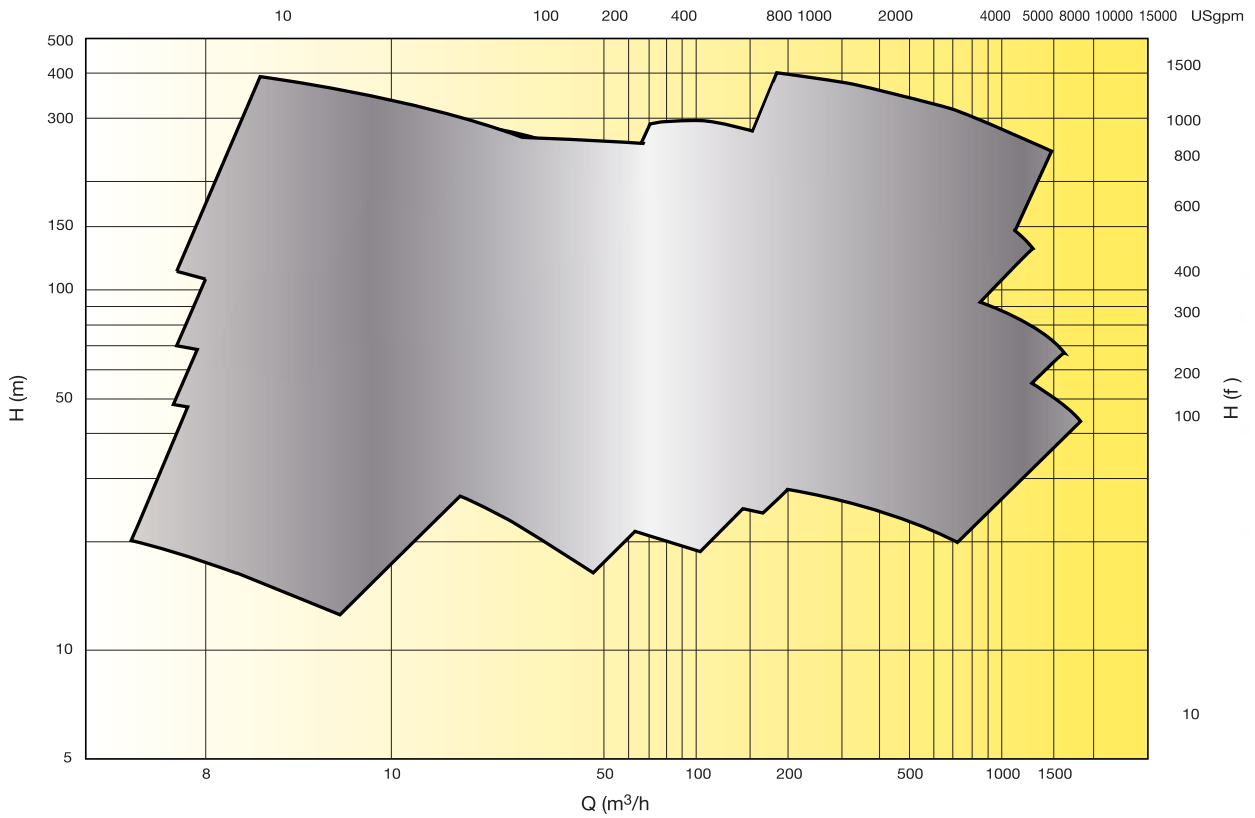
Product Options

- Materials variety acc. to API 610
- Various types of cartridge mechanical seals available
- Several bearing types possible
- For higher pumping temperature cooling of the shaft sealing chambers and bearing housings can also be provided.
- Flanges to ASME, up to ASME Class 600, Higher ratings on request
- Temperature sensors
- Vibration sensors
- Standard or heavy duty base plates available





Hydraulic Coverage



Designation

Example: BB2 150-400 / 160 2 S6 D 115261 A / EXT4

BB2	150	400	110	2 ^(*)	S6	D	115261 ^(**)	A	EXT4
Pump type	Discharge nominal diameter in millimeters	Impeller nominal diameter in millimeters	Nominal power of installed driver in kW	No. of poles	Material class acc. to table H1 of API610	Seal type	Seal plane code acc. to API682	Options	Area classification
BB2: Double stage, Between bearings, radially split centrifugal pumps, acc. to API610	Up to 300mm	Up to 400mm	up to 1400kW	2:3000rpm 4:1500rpm	I-1 I-2 S-1 S-3 S-4 S-5 S-6 C-6 A-8 D-1	S: Single mechanical seal D: Double mechanical seal	Each two digits stands for a plan: For example "115261" means plans 11, 52, and 61 have been utilized together.	A: No option B: Oil mist lubrication C: Vibration sensors D: Temp. Sensors E: Heating jacket F: Special bearing arrangement G: Diesel Engine	SA: Safe area EX: Explosion proof T1-T6: Temperature class

* Other seal arrangements are available on request
 ** For diesel engine refers to the drive speed only

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