

2015

BB1 series

Technical Catalogue





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, BB1 series, are suitable for pumping clean liquids with some tolerance of slight contamination with solids over a wide temperature range.

They can be used:

- For Power stations, heating systems, and district heating systems
- For water treatment and supply
- For Hydrocarbon transfer
- In irrigation and drainage systems
- In fire fighting
- For sea water desalination plants
- As pipeline pumps and pressure boosters
- In process engineering for industries



Key features

- BB1 single stage foot mounted centrifugal pumps
- 20 bar pump to API 610 (11th edition) & Atex compliant
- -15°C to 400°C temperature applications
- Double suction impeller
- Double volute design minimizes hydraulic radial loads
- 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

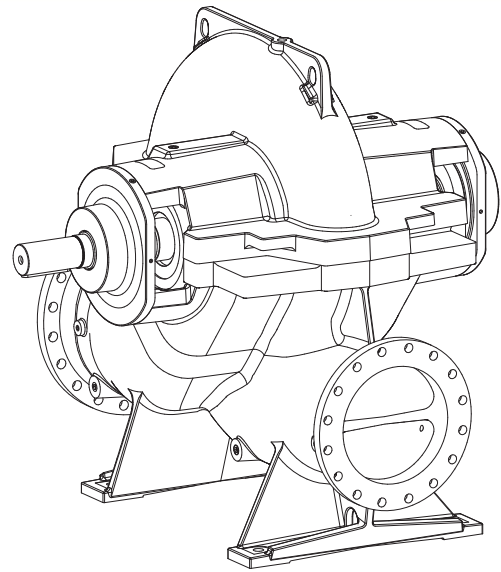


Product Overview

General description

A range of BB1 single stage between bearings axially-split centrifugal pumps arranged either horizontally or vertically 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 / NFPA20:2013 ATEX EC-Directive 94/9/EC
Design pressure rating	Up to 20 bar g @ 20°C
Suction pressure rating	Up to 10 bar g (Standard construction) Up to 20 bar g (Heavy duty construction)
Temperature rating	-15°C to 150°C (Standard construction) -10°C to 400°C (Heavy duty construction)
Design temperature	150°C
Flow rate	Up to 30,000 m3/h
Differential head	Up to 260 m
Speed	Up to 3000 rpm
Configuration	Long coupled pump Bare shaft pump Rotating assembly
Discharge size	Up to 1600 mm
Design life	20 years (3 years uninterrupted operation)



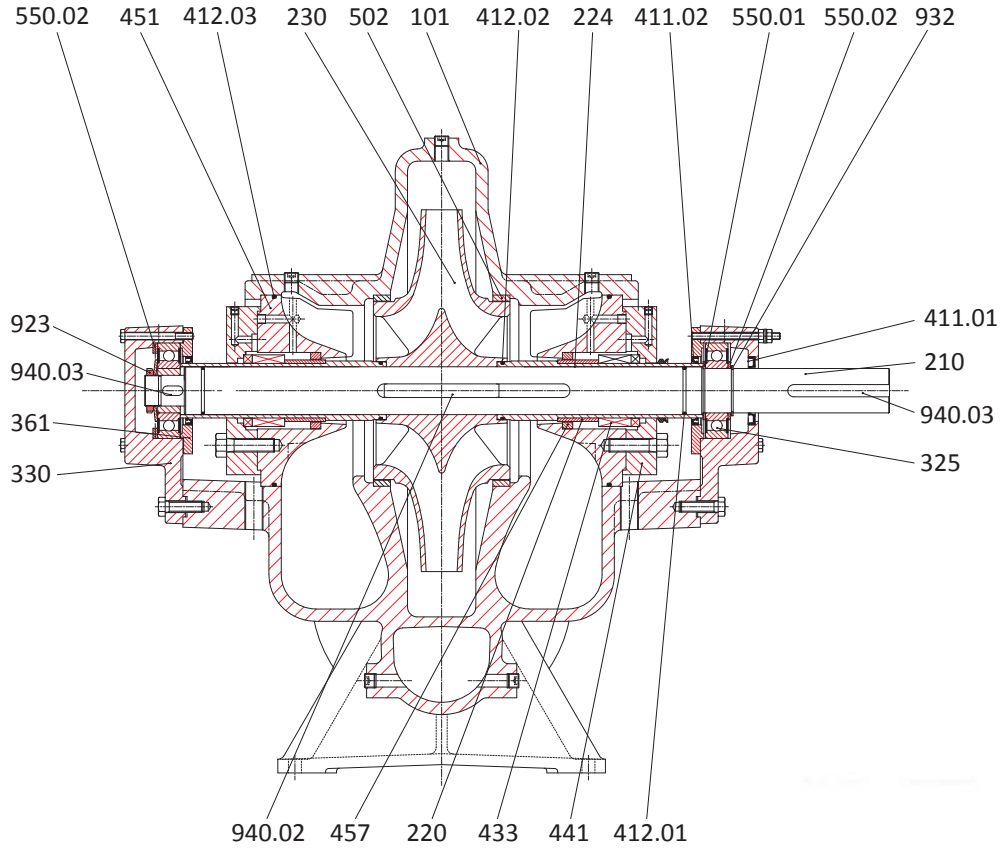
Material Options

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	Mechanical seal	433.00
Shaft	210.00	Seal Gland	441.00
Shaft sleeve	220.01	Seal chamber	451.00
Impeller	230.00	Casing wear ring	502.01
Deep groove BB	320.01	Flat washer	550.01
Deep groove BB	320.02	Flat washer	550.01
Bearing housing	330.00	Flat washer	550.02
Bearing housing cover	361.00	Flat washer	550.03
Oil seal	411.01	Throat bousing	552.00
Oil seal	411.02	Lock nut	923.01
O-ring	412.01	Parallel key	940.01
O-ring	412.02	Parallel key	940.02
O-ring	412.03	Parallel key	940.03

- 3mm corrosion allowance to API610
- Allowable nozzle loads: 2 times greater than API 610 requirements
- Renewable wear rings and shaft sleeve
- Stuffing box designed to accept a minimum of five rings of packing with lantern ring
- Max. shaft diameter in acc. With API610 makes for a very long service life of mechanical seal
- Generously sized bearings for longer service life than specified by API 610, reduces maintenance expenditure and work
- Radial and Thrust Bearings with grease lubrication, guarantee maximum life at minimum maintenance cost
- Large impeller inlet diameters for optimum suction behavior
- Impeller trimmed to match the specified duty point
- Smooth operation with low vibration levels
- Double-entry impeller for axial thrust balancing
- Several hydraulic systems per pump size

Product Options

- Shaft sealed by gland packing or mechanical seals
- Various horizontal and vertical installation options
- Special bearing arrangements for high suction pressure applications
- Flanges to DIN or ASME
- Temperature sensors
- Vibration sensors
- Materials resistant to corrosion and abrasion
- Mobile systems available
- Standard or heavy duty base plates available

Designation

Example: BB1/H 150-500 / 110 2 S6 P 115261 A / EXT4

BB1	H	150	500	110	2 ^(*)	S6	D	115261 ^(**)	A	EXT4
Pump type	Installations 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
BB1: Single stage, Between bearings, axially-split centrifugal pumps, acc. to API610	H: horizontal V: Vertical	Up to 1600mm	Up to 1200mm	up to 1800kW	2:3000rpm 4:1500rpm 6:1000rpm	I-1 I-2 S-1 S-3 S-4 S-5 S-6 C-6 A-8 D-1	P: Soft packing 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

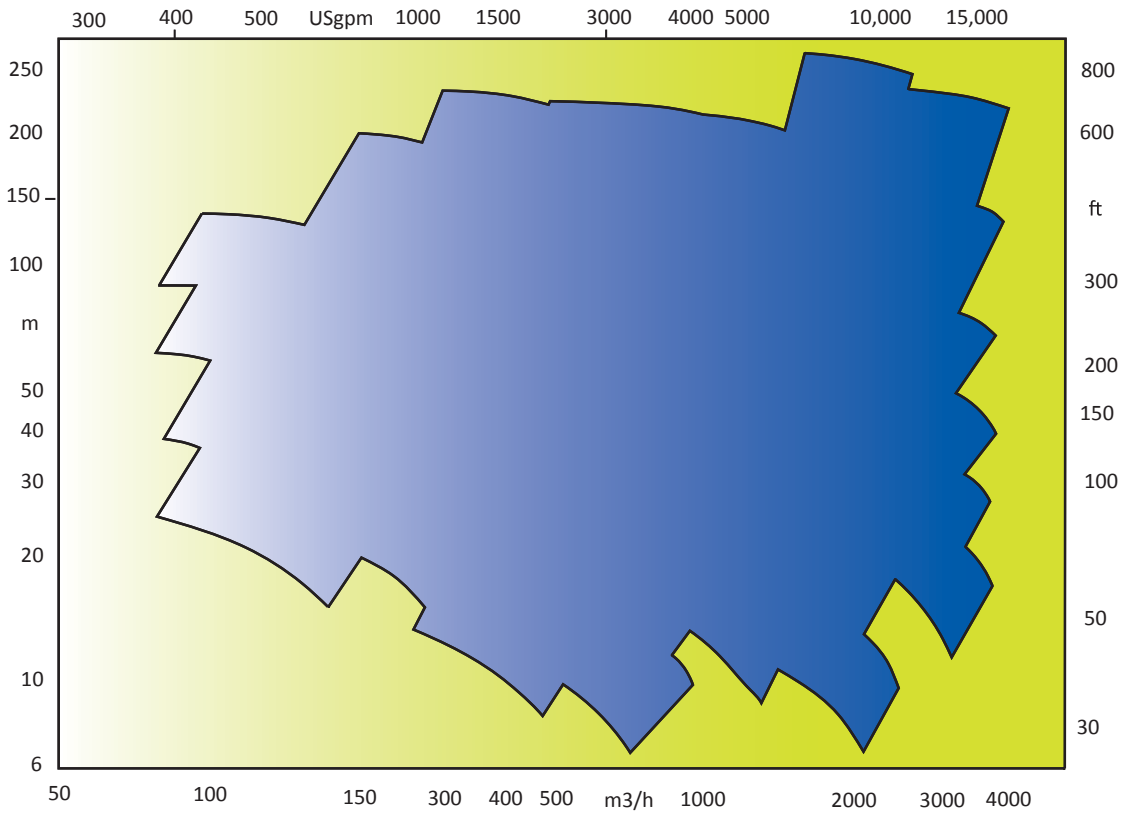
* Other seal arrangements are available on request
** For diesel engine refers to the drive speed only



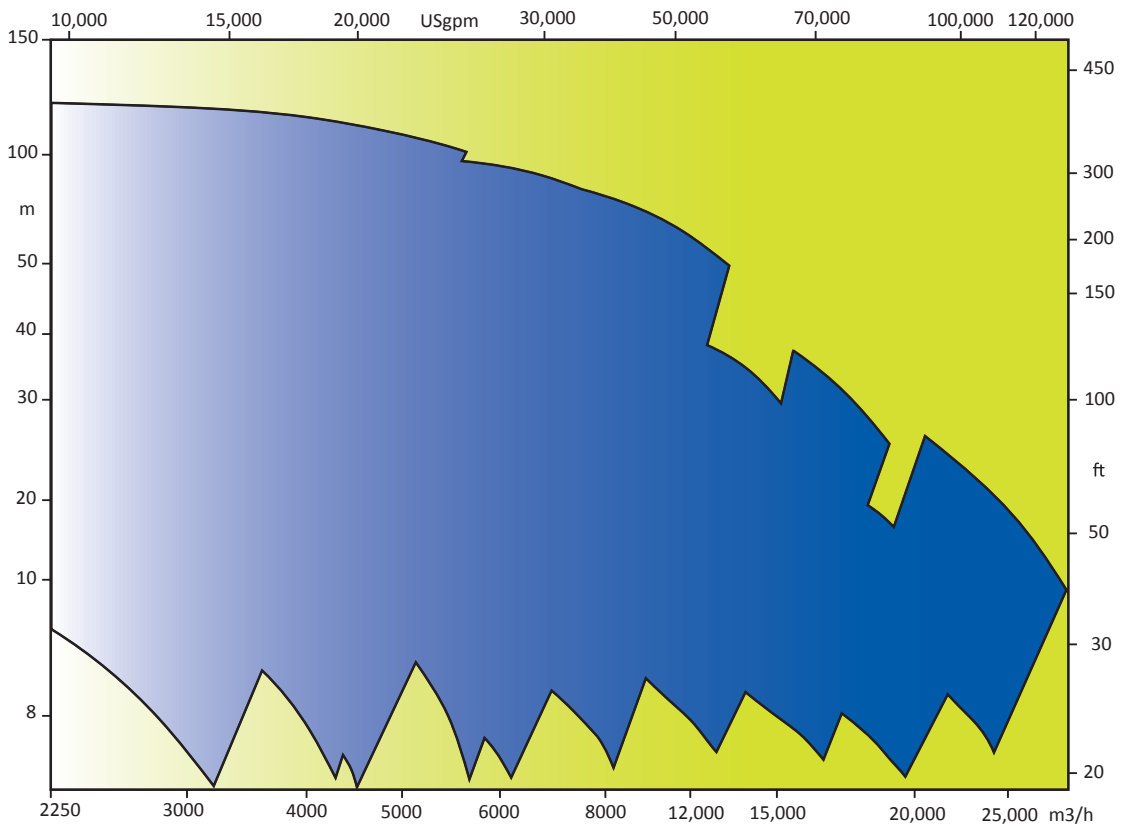
www.aryask.com

Hydraulic Coverage

DN: Ø150~Ø600



DN: Ø700~Ø1600



Tel: (+98) 21 88813461~3

Fax: (+98) 21 88813464

2nd Floor, No. 4, Barmak Alley,
AlvandSt., Argentina Sq.,
Tehran, Iran

info@aryask.com

www.aryask.com



ARYA SEPEHR KAYHAN

BB1 series
Technical Catalogue
2015