

**Gabbioneta Pumps®**  
Heavy Duty Process Pumps  
**AHPB-AHPB DS Range**

## General information

The AHPB, AHPB-DS range heavy duty barrel pumps are multistage, radial split, with single or double entry 1st stage impeller, designed for full compliance with latest edition of API 610 Standard.

The “modular design” philosophy permits to cover a wide range of applications replacing the main hydraulic components i.e. only impeller/diffuser. Casing, shaft, mechanical seals, bearing frames result therefore fully interchangeable and reusable.

A wide range of sizes, number of stages and material combinations complete the variety of the offered product.

## Main design features:

- Geometry of pump components optimised through hydraulic, structural, thermal and dynamic F.E.M. analysis guarantee high product reliability
- Opposed impeller and diffuser configuration to minimise axial and radial hydraulic thrusts
- Large eye single suction or double suction 1st stage impeller to meet low NPSH requirements
- Hydraulic performances checked on a Single Stage Test Equipment. This is particularly useful to verify the effective 1st stage NPSHr
- Easy maintenance procedure
- Near centreline casing mounting for high temperature stability
- Barrel forged in suitable material to improve stress and corrosion resistance
- Central and lateral balancing drums adequately shaped to optimise pump rotordynamic behaviour and minimise axial thrusts
- Shrink fitted impellers for higher operational speed (over 4500 rpm)
- Full cartridge design
- Deep stuffing boxes, designed in accordance with API 682 Standard, suitable to accept any type of mechanical or packing seals
- Axial split bearing housing for easy inspection and maintenance procedure
- Labyrinths and deflectors at both bearing housing to maximise protection against dirt
- Number of stages rangeable from 4 to 14
- “Stiff shaft design”. Rotor operates below its 1st wet critical speed
- Casing guide keys for high temperature application; over 120°C (250°F)
- Three bearings arrangements available:
  - Ball Radial / Ball Thrust
  - Sleeve Radial / Ball Thrust
  - Sleeve Radial / Tilting Pads Thrust (Kingsbury Type)

## Options

The following pump designs can be provided:

- De-staged construction
- Replaceable stuffing box cooling or heating jackets
- “Dry running” capability as per Duncan and Hood criteria
- Double shaft extension
- Cylindrical fit at coupling shaft end
- Special bearing isolators at both bearing housing ends
- ‘CARB’ or hydrodynamic line bearing for high temperature application
- Oil mist lubrication system (pure or purge)
- Forced feed lubrication system
- Temperature and/or vibration detection and monitoring equipment
- Baseplate available with three point gimbaling mounting (FPSO services)

## Main pumps applications refer to heavy duties on

- Oil & Gas
- Fluid transportation
- Refineries
- Petrochemical plants
- Boiler feedwater and
- Power plant auxiliaries
- Water injection
- Reverse osmosis
- “Hot” charge

## Operating data

### Capacity

up to 2000 m<sup>3</sup>/h (8800 USgpm)

### Head

up to 3400 m (11100 feet)

### Temperature

from - 30°C (-20°F) to 400°C (750°F)

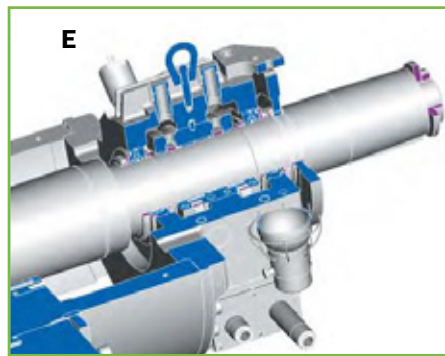
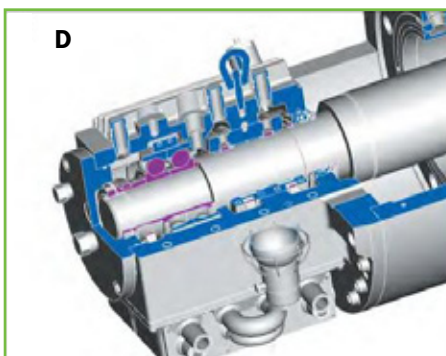
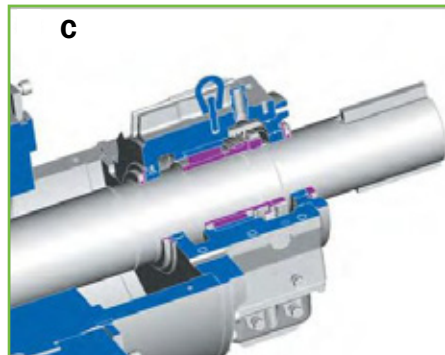
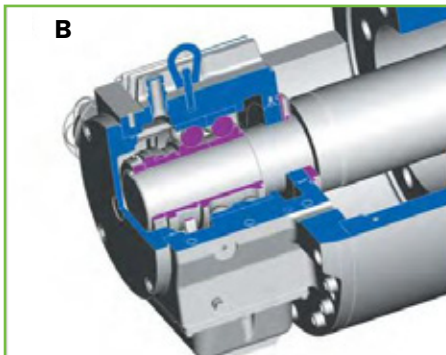
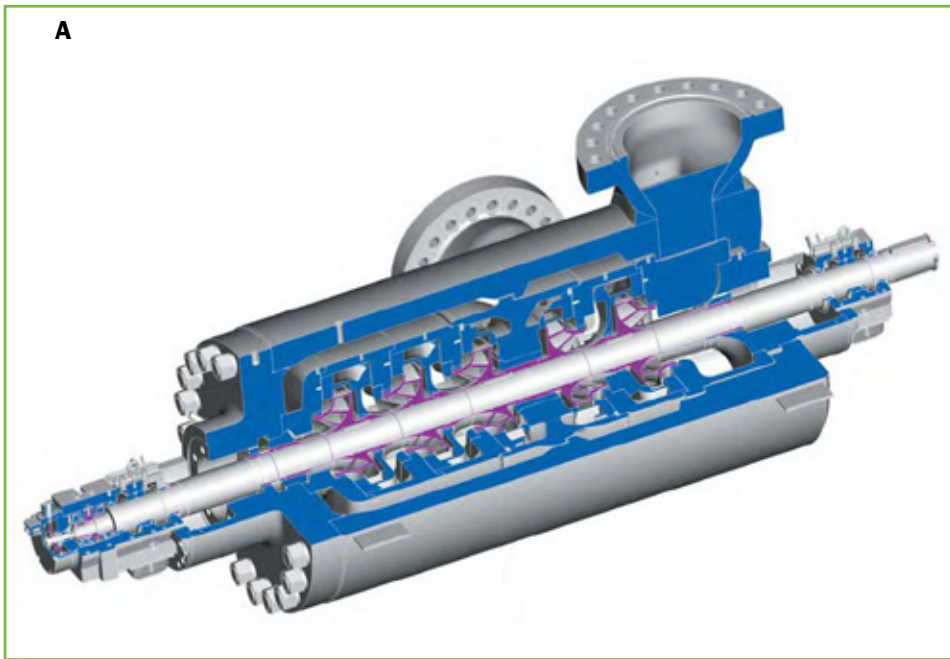
### Design working pressure

up to 350 barg (5000 psig)

### Rotational speed

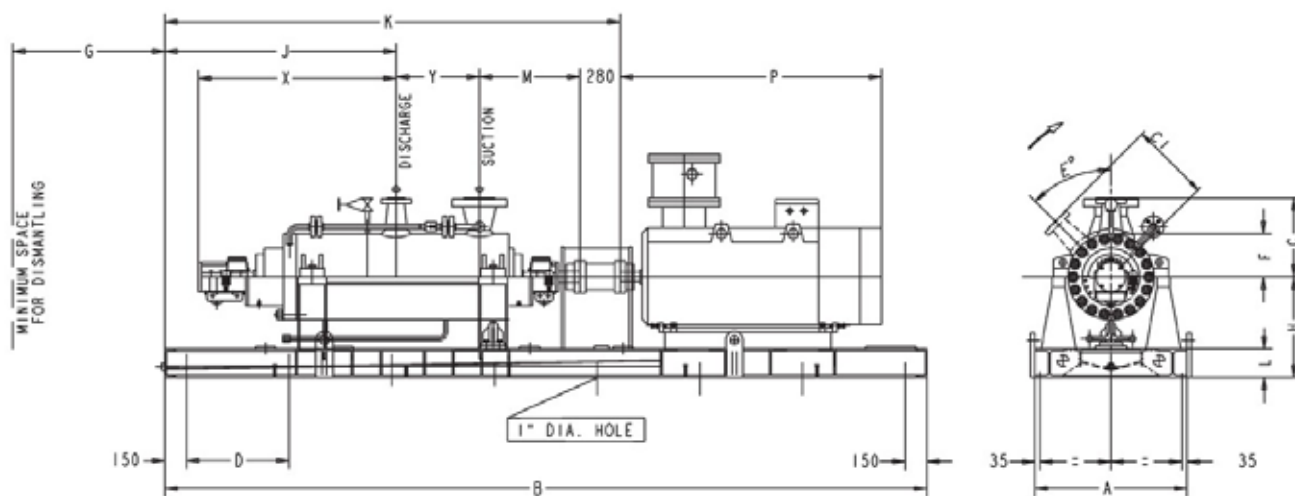
up to 7000 rpm





- A. Sleeve-Kingsbury
- B. Ball-Ball NDE
- C. Ball-Ball DE
- D. Sleeve-Ball NDE
- E. Sleeve-Ball DE

## Overall dimensions



Pump type	No of Stages	A	C	D	E	E <sub>1</sub>	F	G	H	L	X			Y	M	J	K																	
											B/B	S/B	S/K																					
AHPB 200 / 50 - 80 (4'X2') (4'X2') Single suction first stage	4	1080	500	500	715	45°	263	2000	700	200	854	987	998	130	580	1300	2290																	
	5																																	
	6																																	
	7																																	
	8																																	
	9																																	
	10																																	
	11																																	
	12																																	
	13																																	
	14																																	
	AHPB 250 / 50 - 80 - 100 (4'X2') (4'X3') (6'X4') Single suction first stage																	4	1240	550	550	715	45°	300	2000	700	200	915	1039	1059	150	625	1330	2380
																		5																
																		6																
7																																		
8																																		
9																																		
10																																		
11																																		
12																																		
13																																		
14																																		
AHPB DS 250 / 80 - 100 (4'X2') (4'X3') (6'X4') Double suction first stage		5	1240	550	550	715	45°	300	2000	700	200	915	1039	1059	265	700	1330	2575																
		6																																
		7																																
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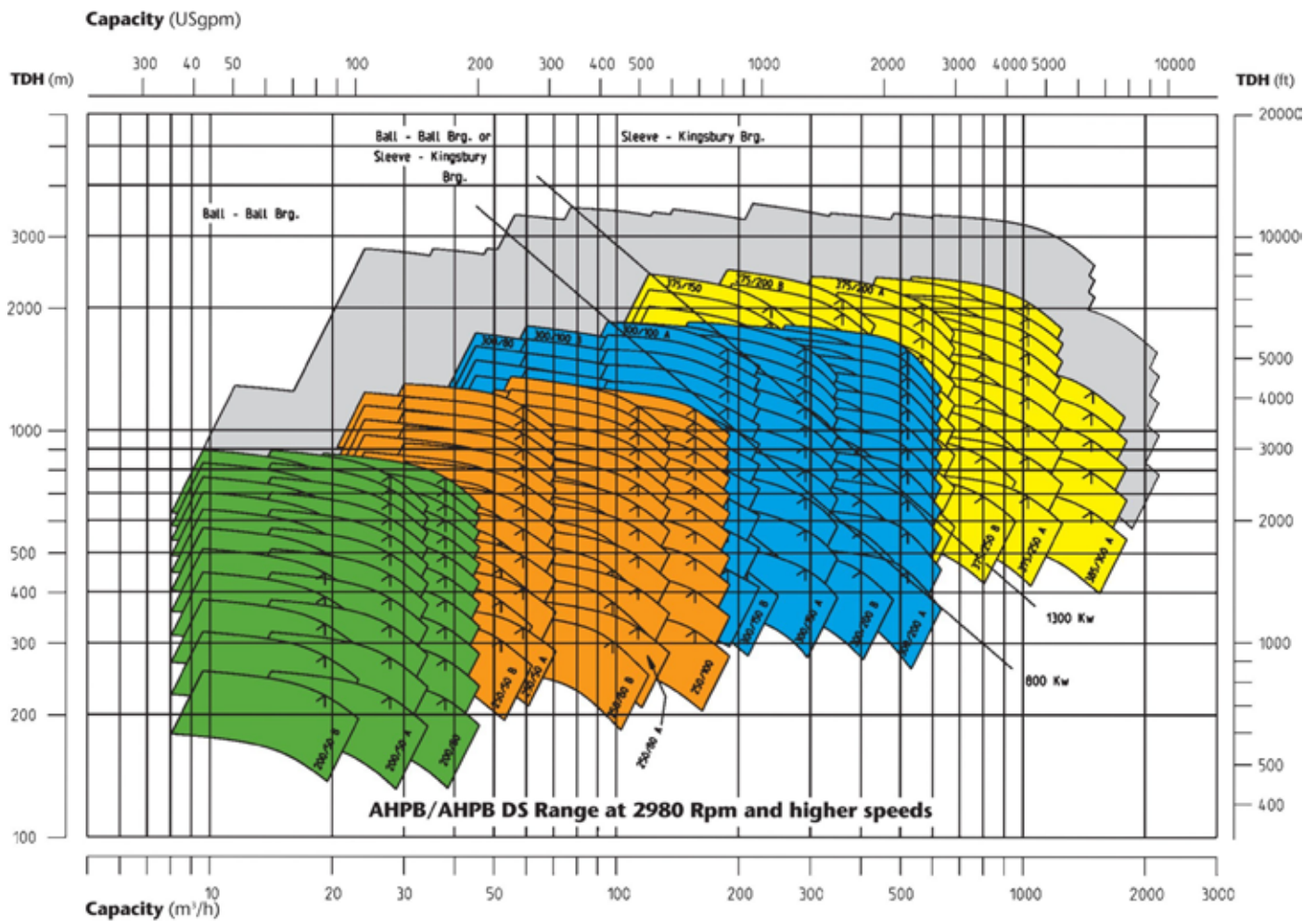
## General notes

1. All dimensions are in mm. Do not use for construction unless certified.
2. Minimum flange rating on nozzle - ANSI 600#.
3. Dimensions B and P vary with driver selection.
4. Dimension X relative to Sleeve-Kingsbury configuration does not include the coaxial lube oil pump.

Pump type	No of Stages	A	C	C <sub>1</sub>	D	E*	F	G	H	H	X			Y	M	J	K													
											B/B	S/B	S/K																	
AHPB 300 / 80 - 100 - 150 - 200* (6"X8") (6"X4") (8"X6") (10"X8") Single suction first stage	4*	1240	600	600	750	45°	350	800	200	2000	800	200	1010	1134	1154	280	640	1425	2625											
	4												1010	1134	1154	280		1425	2625											
	5												1140	1264	1284	280		1555	2755											
	6												1140	1264	1284	410		1555	1885											
	7												1270	1394	1414	410		1685	3015											
	8												1270	1394	1414	540		1684	3145											
	9				1400	1524							1544	540	1815	3275														
	10				1400	1524							1544	670	1945	3535														
	11				1530	1654							1674	670	1945	3665														
	12				1530	1654							1674	800	12075	3795														
	13				1660	1784							1804	800	2075	3795														
	14				1660	1784							1804	930	2075	3925														
	AHPB DS 300 / 100 - 150 - 200 (6"X4") (8"X6") (10"X8") Double suction first stage				5	1240							600	715	715	45°		350	800	200	2000	800	200	1010	1134	1154	410	752	1425	2867
					6																			1140	1264	1284	410		1555	2997
7		1140	1264	1284	540		1370	3125																						
8		1270	1394	1414	540		1685	3257																						
9		1270	1394	1414	670		1685	3387																						
10		1400	1524	1544	670		1815	3517																						
11		1400	1524	1544	800		1815	3647																						
12		1530	1654	1674	800		1945	3777																						
13		1530	1654	1674	930		1945	3907																						
AHPB 375 / 150 - 200 - 250 (8"X6") (10X8") (12"X10") Single suction first stage		4	1545	700	700		715	45°	425	1000	260	2500				1000	260							1211	1327	1440	375		910	1720
	5	1371				1487							1600	375	1880			3360												
	6	1371				1487							1600	535	1800			3520												
	7	1531				1647							1760	535	2040			3680												
	8	1531				1647							1760	695	2040			3840												
	9	1691				1807							1920	695	2200			4000												
	10	1691				1807	1920	855					2200	4160																
	11	1851				1967	2080	855					2360	4320																
	12	1851				1967	2080	1015					2360	4480																
	AHPB DS 375 / 150 - 200 - 250 (8"X6") (10"X8") (12"X10") Double suction first stage	5				1545	700	700					715	45°	425			1000	260	2500	1000	260	1211	1453	1440	520	935	1720		3420
6		1371	1613	1600	520				1880	3580																				
7		1371	1613	1600	680				1880	3740																				
8		1531	1773	1760	680				2040	3900																				
9		1531	1773	1760	840				2040	4060																				
10		1691	1933	1920	840				2200	4220																				
11		1691	1933	1920	1000				2200	4380																				
12		1851	2093	2080	1000				2360	4540																				
AHPB 385/300 (12"X16") Single suction first stage		4	2000	750	750				715	90°	470	1100	300	3000		1100	300						1139	1381	1367	460		910	1800	3100
		5																					1389	1631	1617	460			2050	3350
	6	1389				1631	1617	710							2050			3600												
	7	1639				1881	1867	710							2300			3850												
	8	1639				1881	1867	960		2300					4100															



# Coverage Chart



## Pump identification

Pump type	AHPB	250 / 50	10
Nominal impeller diameter (mm)		250	
Nominal discharge nozzle diameter (mm)		50	
Number of stages			10

## A century of experience

Since the foundation of the company in 1897, Gabbioneta Pumps® has been engaged in design and manufacture of high quality centrifugal pumps.

The products and the markets served progressively changed from water to chemical industry and finally, in the last thirty years, to API 610 heavy duty pumps for refinery and petrochemical industries.

Product development is based on a thorough interchange of marketing and operating experience within the company and in close cooperation with project and plant engineers.

Manufacturing is carried out in a factory equipped with several modern CNC machines and machine tools. Special note has to be given to the machining centers where pump casings can be machined completely with only two settings.

In-house facilities are designed to meet the performance and NPSH testing requirements of all pumps manufactured in the company in full compliance with API 610 Standards.

A quality assurance system certified in accordance with ISO 9001 ensures Gabbioneta Pumps® are of the highest quality.





**Trillium Pumps Italy S.p.A.**  
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[www.trilliumflow.com](http://www.trilliumflow.com) Certified: ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007