

HORIZONTAL HIGH PRESSURE MULTI-STAGE BARREL PUMPS

API-610 TYPE: BB5

TERMOMECCANICA PUMP MODEL: MESB - MESBD



MAIN APPLICATIONS:

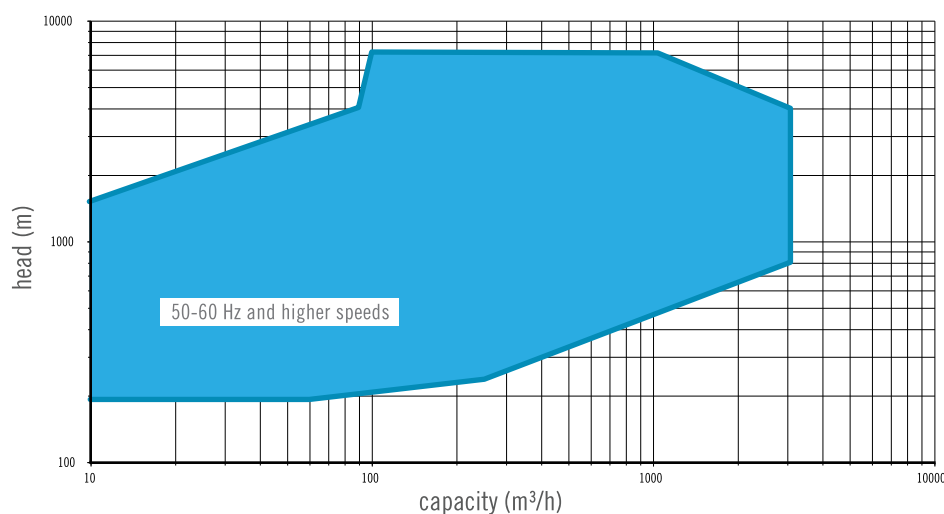
- Main & start-up boiler feed for any type of fossil fuel & nuclear power plants
- Nuclear auxiliary services
- Water and oil transportation
- Oil well water injection - onshore and offshore
- High pressure applications in refinery and petrochemical plants

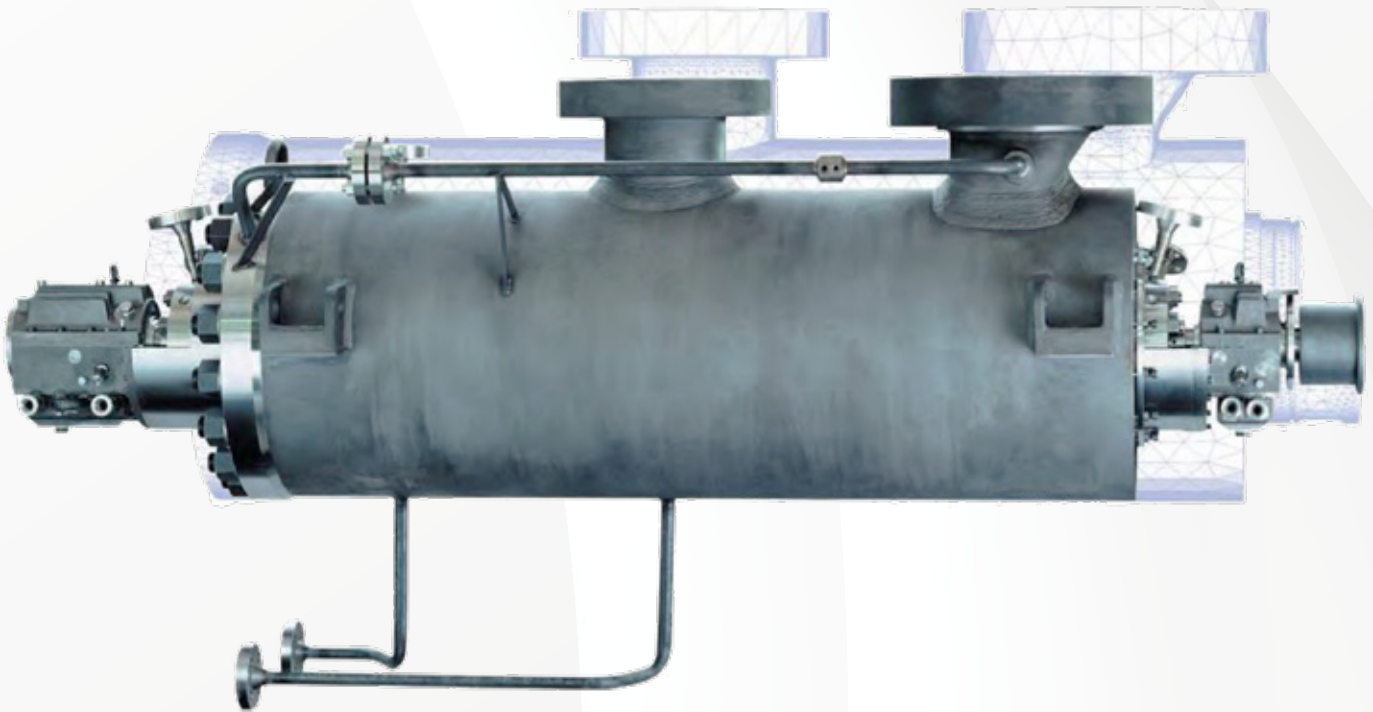
KEY FEATURES:

- Between bearings, double casing, radially split, and multistage pumps with a diffuser design
- A full cartridge pull-out solution is standard for simple and efficient dismantling
- The MESBD models are first stage double entry impeller for low NPSH applications
- A bolted discharge cover design is available
- For high stage numbers, a back-to-back arrangement is adopted
- A bleed-off nozzle can also be provided
- The hydraulic axial thrust is compensated by a balancing drum
- Antifriction or hydrodynamic bearings can be supplied based on operating parameters

OPERATING RANGE

• Capacity:	up to	3,000 m ³ /h	13,210 gpm
• Head:	up to	7,000 m	23,000 ft.
• Pressure:	up to	1,000 bar	14,500 psig
• Temperature:	up to	+450 °C	842 °F
• Speed of rotation	up to	7,000 rpm	7,000 rpm





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 m³/h (8800 USgpm)

Head

up to 3400 m (11100 feet)

Temperature

from - 30°C (-20°F) to 400°C (750°F)

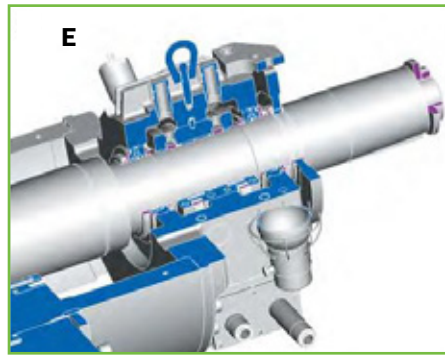
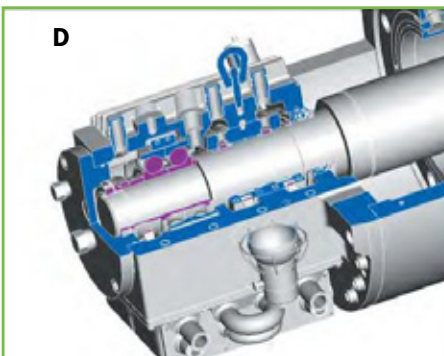
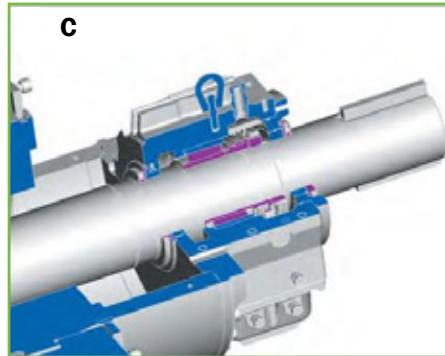
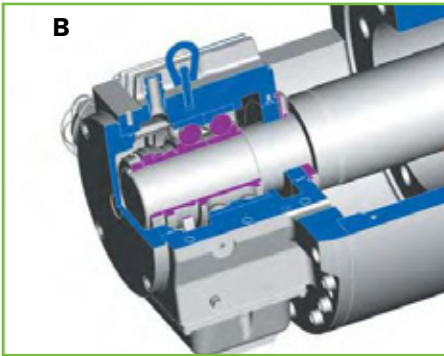
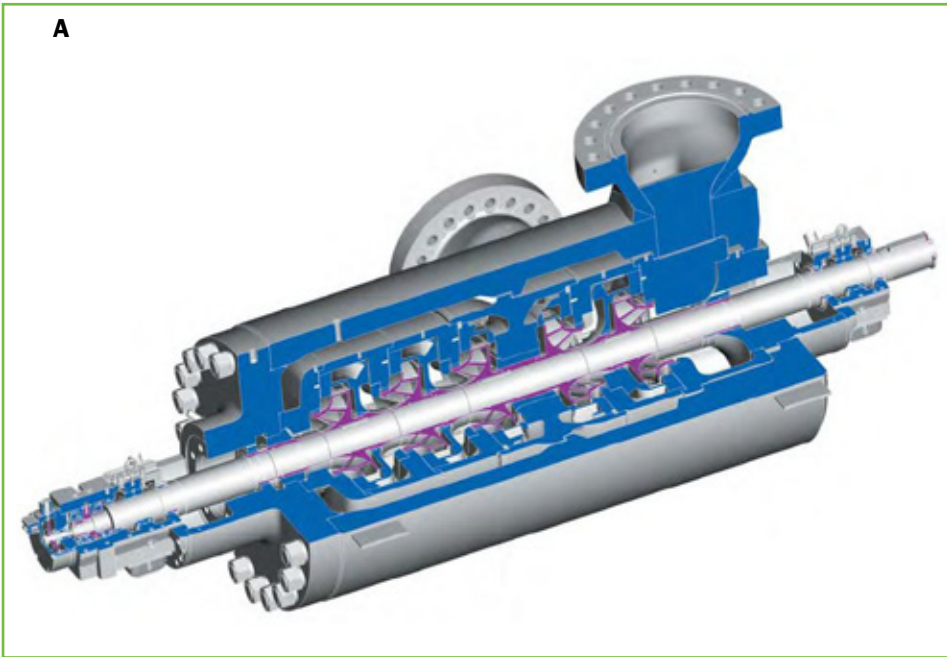
Design working pressure

up to 350 barg (5000 psig)

Rotational speed

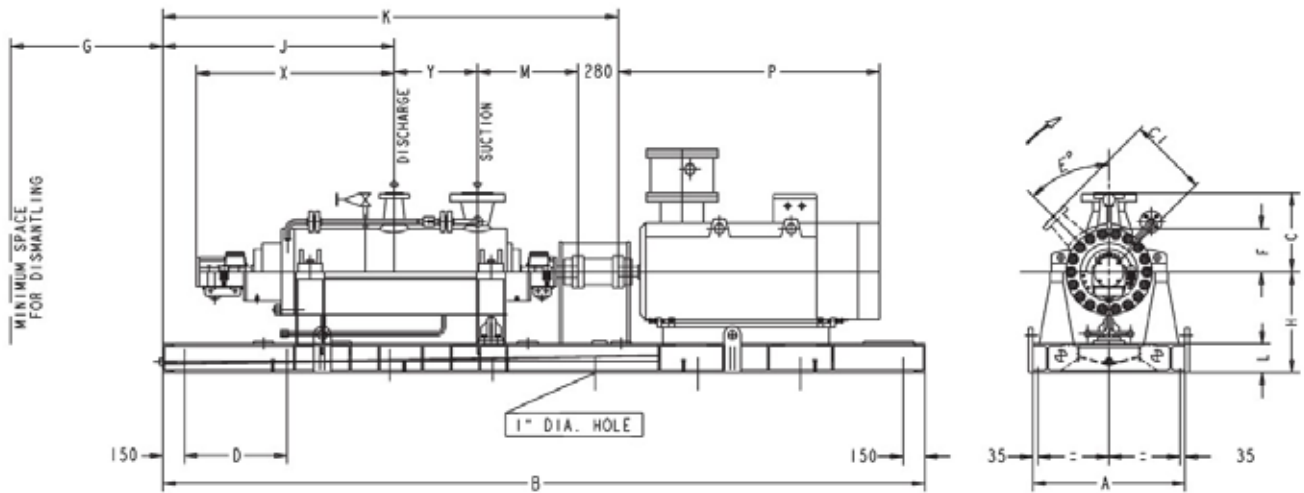
up to 7000 rpm





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

Overall dimensions



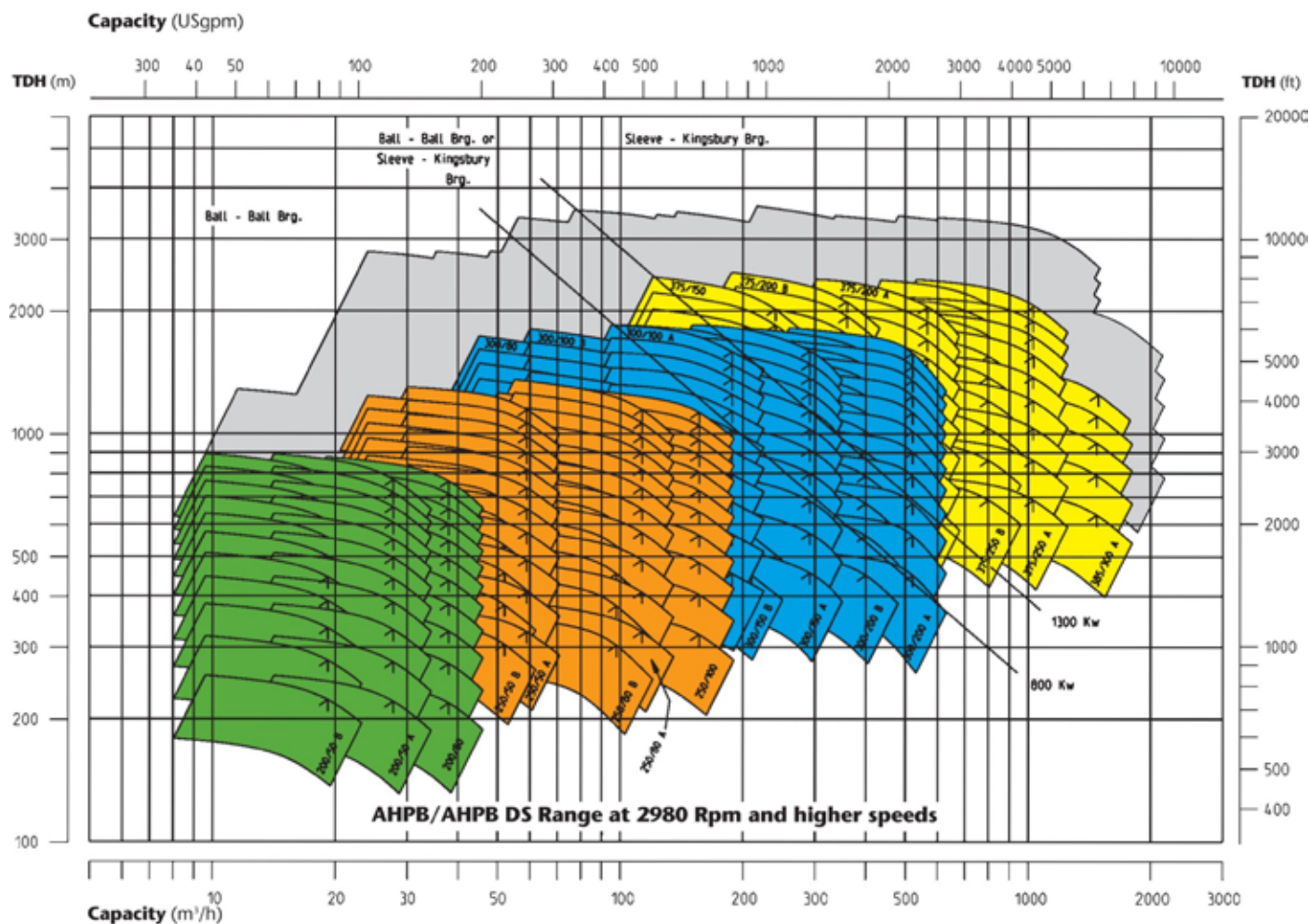
Pump type	No of Stages	A	C	D	E	E ₁	F	G	H	L	X			Y	M	J	K
											B/B	S/B	S/K				
AHPB 200 / 50 - 80 (4'X2') (4'X2') Single suction first stage	4	1080	500	500	715	45°	263	2000	700	200	854	987	998	130	580	1300	2290
	5							2000			944	1077	1088	130		1390	2380
	6							2000			944	1077	1088	220		1390	2470
	7							2000			1034	1167	1178	220		1480	2560
	8					0°		2000			1034	1167	1178	310		1480	2650
	9							2000			1124	1257	1268	310		1570	2740
	10							2000			1124	1257	1268	400		1570	2830
	11							2500			1214	1347	1358	400		1660	2920
	12							2500			1214	1347	1358	490		1660	3010
	13							2500			1304	1437	1448	490		1750	3100
	14							2500			1304	1437	1448	580		1750	3190
	AHPB 250 / 50 - 80 - 100 (4'X2') (4'X3') (6'X4') Single suction first stage							4			1240	550	550	715		45°	300
5		2000	1020	1144	1164	150	1435	2485									
6		2000	1020	1144	1164	255	1435	2590									
7		2000	1125	1249	1269	255	1540	2695									
8		0°	2000	1125	1249	1269	360	1540	2800								
9			2000	1230	1354	1374	380	1645	2905								
10			2500	1230	1354	1374	465	1645	3010								
11			2500	1335	1459	1479	465	1750	3115								
12			2500	1335	1459	1479	570	1750	3220								
13			2500	1440	1564	1584	570	1855	3325								
14			2500	1440	1564	1584	675	1855	3430								
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	
	6	2000	1020							1144	1164	265	1435	2680			
	7	0°	2000					1020		1144	1164	370	1435	2785			
	8		2000					1125		1249	1269	370	1540	2890			
	9		2500					1125		1249	1269	475	1540	2995			
	10		2500					1230		1354	1374	475	1645	3100			
	11		2500					1230		1354	1374	580	1645	3205			
	12		2500					1335		1458	1479	580	1750	3310			
	13		2500					1335		1458	1479	685	1750	3415			

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 ₁	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	2000	800	200	1010	1134	1154	280	640	1425	2625									
	4							2000			1010	1134	1154	280		1425	2625									
	5							2000			1140	1264	1284	280		1555	2755									
	6							2000			1140	1264	1284	410		1555	1885									
	7							2500			1270	1394	1414	410		1685	3015									
	8				715	0°		2500			1270	1394	1414	540		1684	3145									
	9							2500			1400	1524	1544	540		1815	3275									
	10							3000			1400	1524	1544	670		1945	3535									
	11							3000			1530	1654	1674	670		1945	3665									
	12							3000			1530	1654	1674	800		12075	3795									
	13							3000			1660	1784	1804	800		2075	3795									
	14							3000			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	1010	1134	1154	410	752	1425	2867
								6												2500	1140	1264	1284		410	1555
7		715	0°	2500	1140	1264	1284	540	1370	3125																
8				2500	1270	1394	1414	540	1685	3257																
9				2500	1270	1394	1414	670	1685	3387																
10				2500	1400	1524	1544	670	1815	3517																
11				3000	1400	1524	1544	800	1815	3647																
12		3000	1530	1654	1674	800	1945	3777																		
13		3000	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				1211	1327	1440				375	910	1720	3200			
	5	2500									1371	1487	1600	375	1880	3360										
	6	3000									1371	1487	1600	535	1800	3520										
	7	3000									1531	1647	1760	535	2040	3680										
	8	3000									1531	1647	1760	695	2040	3840										
	9	715				0°	3000				1691	1807	1920	695	2200	4000										
	10						3500				1691	1807	1920	855	2200	4160										
	11						3500				1851	1967	2080	855	2360	4320										
	12						3500				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	1211	1453		1440	520	935	1720	3420
6		3000	1371	1613	1600	520	1880	3580																		
7		3000	1371	1613	1600	680	1880	3740																		
8		3000	1531	1773	1760	680	2040	3900																		
9		3000	1531	1773	1760	840	2040	4060																		
10		715	0°	3500	1691	1933	1920	840	2200	4220																
11				3500	1691	1933	1920	1000	2200	4380																
12				3500	1851	2093	2080	1000	2360	4540																
AHPB 385/300 (12'X16') Single suction first stage				4	2000	750	750	715	90°	470				1100	300				1139	1381	1367	460	910		1800	3100
				5															3000	1389	1631	1617			460	2050
	6	3500	1389	1631							1617	710	2050			3600										
	7	3500	1639	1881							1867	710	2300			3850										
	8	4000	1639	1881				1867	960		990	2300	4100													

Coverage Chart



Pump identification

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

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.





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