

# 4BHS

## CENTRIFUGAL BOREHOLE PUMPS, 4"

in AISI 304 stainless steel



Borehole centrifugal pumps, 4", in AISI 304 throughout. Suitable for coupling to 4" motors, NEMA compliant.

### APPLICATIONS

- Domestic, agricultural and industrial water supply systems
- Pressurisation and fire systems
- Irrigation
- Washing
- Handling clear water in general

### TECHNICAL FEATURES

- Reliable, robust
- Corrosion resistant
- Exceptional efficiency due to smooth surface impellers and diffusers

### PUMP TECHNICAL DATA

- Maximum immersion:
  - 350 m (with motor in water bath)
  - 150 m (with motor in oil bath)
- Maximum fluid temperature: 30°C
- Maximum amount of sand: 50 ppm
- Maximum amount of chlorine: 500 ppm
- Delivery connection G1¼ (4BHS 2), G1½ (4BHS 4), G2 (4BHS 7-4BHS 15)
- The pumps can be supplied as follows:
  - 4BHS pump plus OY motor in oil bath
  - 4BHS pump plus WY motor in water bath
- MEI > 0,4 (4BHS 2 - 4BHS 4 - 4BHS 7)  
For further information, refer to our Data Book on [www.ebaraeurope.com](http://www.ebaraeurope.com)
- 4BHS 15 currently not conforming with EuP Directive (available only for countries outside the EU or for assembly in fire kits/units)

**The pump and motor are supplied separately.**

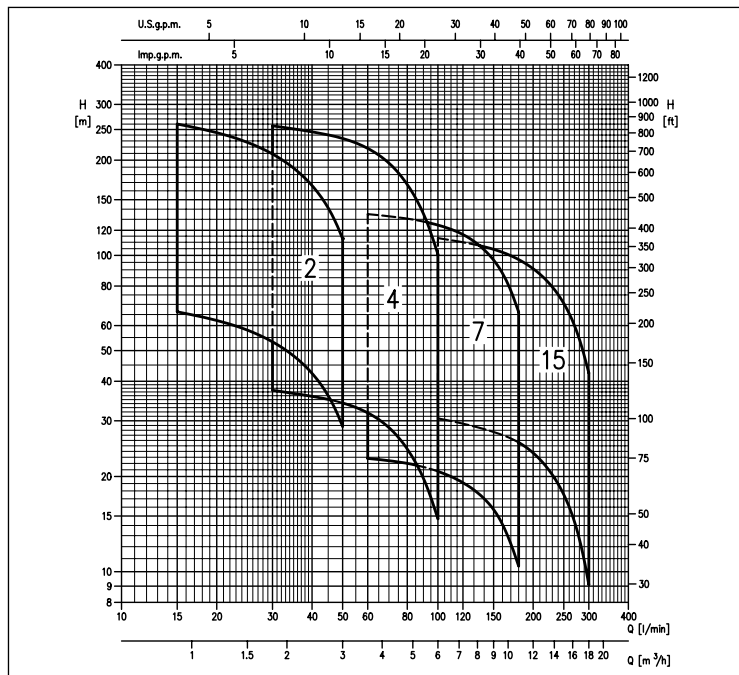
### MOTOR TECHNICAL DATA

- 2 pole motor in oil bath (OY), or water bath (WY)
- Max. starts per hour: 30 (OY) - 20 (WY)
- Power cable snap connection
- Insulation class F (OY) - B (WY)
- Protection degree IP58 (OY) - IP68 (WY)
- Single phase voltage 230V (±10%) 50Hz (OYM),  
Three phase voltage 380-415V (±10%) 50Hz (OY)
- Single phase voltage 230V (-10%+6%) 50Hz (WYM),  
Three phase voltage 380-415V (-10%+6%) 50Hz (WY)
- For dimensioning the cables, see page 54 or refer to our Data Book on [www.ebaraeurope.com](http://www.ebaraeurope.com)

### MATERIALS

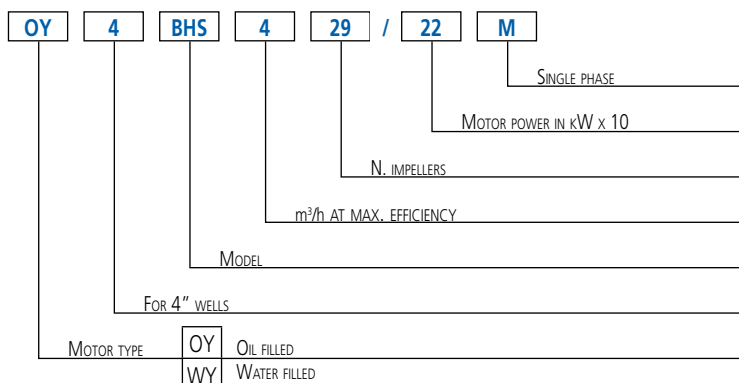
- Delivery pipe and motor mount in moulded stainless steel
- Bracket, ports, coupling, impeller, diffuser, valve, stages, linkages and cable cover in EN 1.4301 (AISI 304)
- Clearance ring in EN 1.4301 (AISI 304) + EPDM
- Shaft in EN 1.4401 (AISI 316)
- Radial bearings, axial bearings and thrust bearing in tungsten carbide

### PERFORMANCE RANGE (According ISO 9906 Annex 3B)



**N.B. Models 4BHS 15 are not available for purchase inside the EU**

### IDENTIFICATION CODE



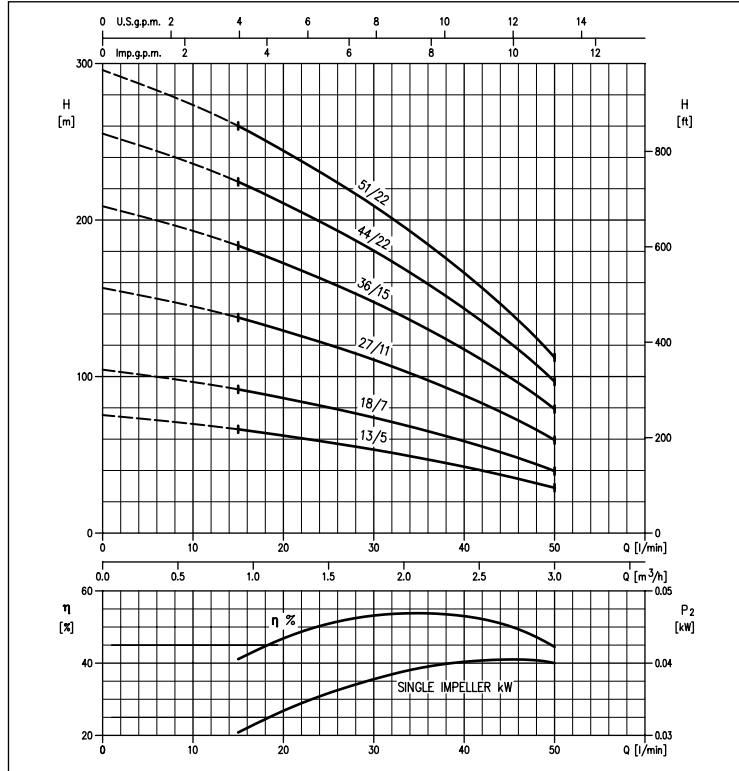


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## CENTRIFUGAL BOREHOLE PUMPS, 4" in AISI 304 stainless steel

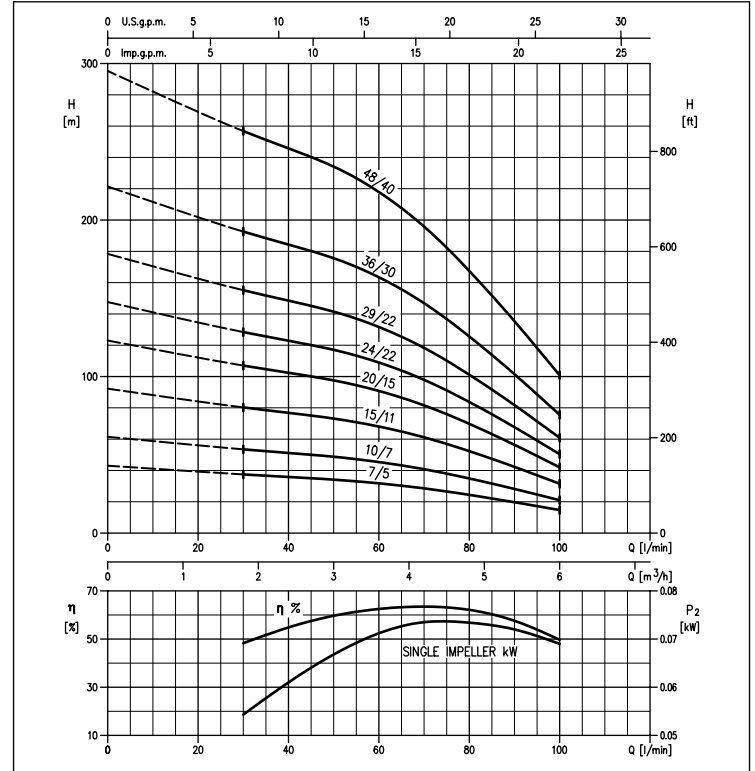
### PERFORMANCE CURVES series 4BHS 2

(According ISO 9906 Annex 3B) - Impeller dia.: 70.5 mm



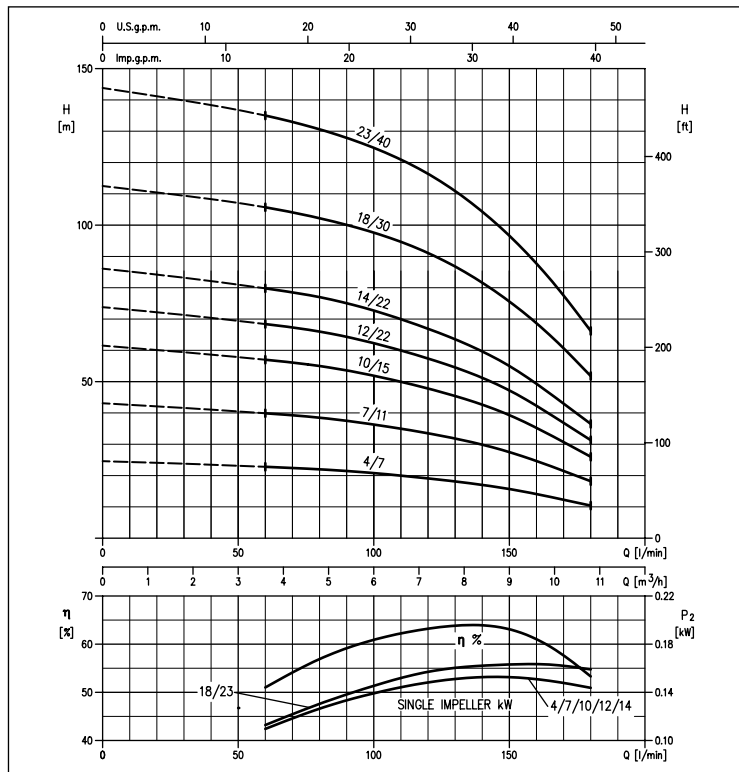
### PERFORMANCE CURVES series 4BHS 4

(According ISO 9906 Annex 3B) - Impeller dia.: 72 mm



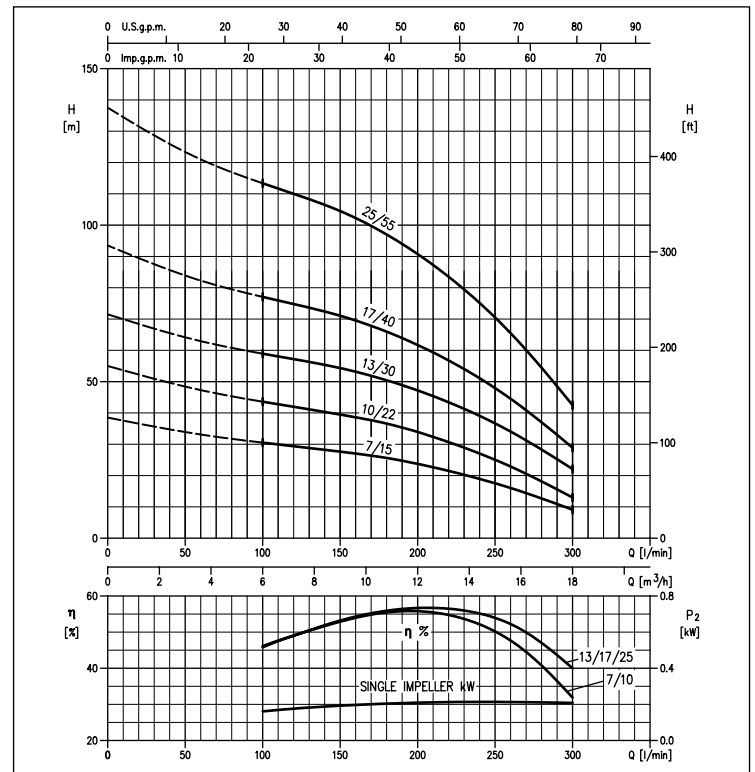
### PERFORMANCE CURVES series 4BHS 7

(According ISO 9906 Annex 3B) - Impeller dia.: 74 mm



### PERFORMANCE CURVES series 4BHS 15

(According ISO 9906 Annex 3B) - Impeller dia.: 72 mm



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## CENTRIFUGAL BOREHOLE PUMPS, 4"

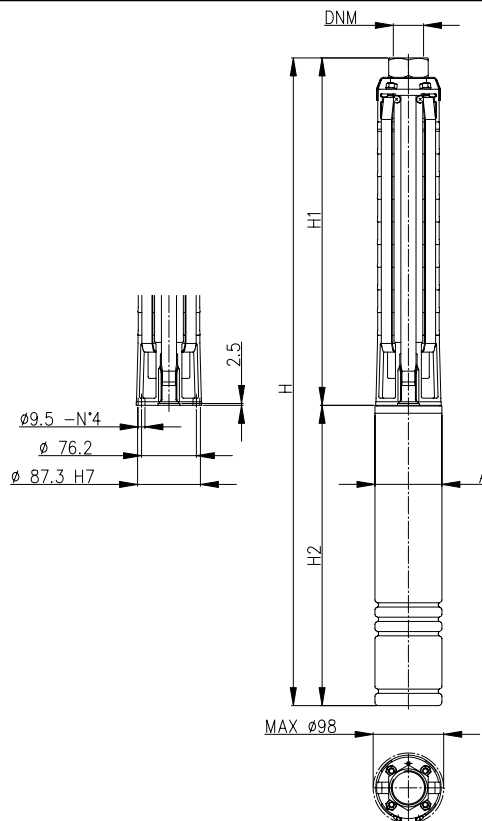
in AISI 304 stainless steel

### PERFORMANCE TABLE

single phase	Model three phase	P <sub>1</sub>		Q=Flow rate															
		[HP]	[kW]	l/min	15	20	30	40	50	60	80	100	120	150	180	220	260	300	
				m <sup>3</sup> /h	0.9	1.2	1.8	2.4	3	3.6	4.8	6	7.2	9	10.8	13.2	15.6	18	
				H=Head [m]															
4BHS 2-13/5M	4BHS 2-13/5	0.75	0.55	66.5	62.5	53.5	42.5	28.6	-	-	-	-	-	-	-	-	-	-	-
4BHS 2-18/7M	4BHS 2-18/7	1.0	0.75	92.0	86.0	74.0	58.5	39.6	-	-	-	-	-	-	-	-	-	-	-
4BHS 2-27/11M	4BHS 2-27/11	1.5	1.1	138.0	129.0	111.0	88.0	59.5	-	-	-	-	-	-	-	-	-	-	-
4BHS 2-36/15M	4BHS 2-36/15	2.0	1.5	184.0	172.0	148.0	117.0	79.0	-	-	-	-	-	-	-	-	-	-	-
4BHS 2-44/22M	4BHS 2-44/22	3.0	2.2	224.0	211.0	180.0	143.0	97.0	-	-	-	-	-	-	-	-	-	-	-
4BHS 2-51/22M	4BHS 2-51/22	3.0	2.2	260.0	244.0	209.0	166.0	112.0	-	-	-	-	-	-	-	-	-	-	-
4BHS 4-7/5M	4BHS 4-7/5	0.75	0.55	-	-	37.5	35.8	34.2	31.8	24.4	14.7	-	-	-	-	-	-	-	-
4BHS 4-10/7M	4BHS 4-10/7	1.0	0.75	-	-	53.5	51.0	49.0	45.5	34.9	21.0	-	-	-	-	-	-	-	-
4BHS 4-15/11M	4BHS 4-15/11	1.5	1.1	-	-	80.5	77.0	73.0	68.0	52.5	31.5	-	-	-	-	-	-	-	-
4BHS 4-20/15M	4BHS 4-20/15	2.0	1.5	-	-	107.0	102.0	97.5	91.0	70.0	42.0	-	-	-	-	-	-	-	-
4BHS 4-24/22M	4BHS 4-24/22	3.0	2.2	-	-	128.0	123.0	117.0	109.0	84.0	50.5	-	-	-	-	-	-	-	-
4BHS 4-29/22M	4BHS 4-29/22	3.0	2.2	-	-	155.0	148.0	142.0	132.0	101.0	61.0	-	-	-	-	-	-	-	-
	4BHS 4-36/30	4.0	3.0	-	-	193.0	184.0	176.0	163.0	126.0	75.5	-	-	-	-	-	-	-	-
	4BHS 4-48/40	5.5	4.0	-	-	257.0	246.0	234.0	218.0	168.0	101.0	-	-	-	-	-	-	-	-
4BHS 7-4/7M	4BHS 7-4/7	1.0	0.75	-	-	-	-	-	22.8	22.0	20.8	19.1	15.7	10.4	-	-	-	-	-
4BHS 7-7/11M	4BHS 7-7/11	1.5	1.1	-	-	-	-	-	39.9	38.5	36.3	33.5	27.5	18.2	-	-	-	-	-
4BHS 7-10/15M	4BHS 7-10/15	2.0	1.5	-	-	-	-	-	57.0	55.0	52.0	48.0	39.3	26.0	-	-	-	-	-
4BHS 7-12/22M	4BHS 7-12/22	3.0	2.2	-	-	-	-	-	68.5	66.0	62.5	57.5	47.0	31.3	-	-	-	-	-
4BHS 7-14/22M	4BHS 7-14/22	3.0	2.2	-	-	-	-	-	80.0	77.0	72.5	67.0	55.0	36.5	-	-	-	-	-
	4BHS 7-18/30	4.0	3.0	-	-	-	-	-	106.0	102.0	97.5	91.0	75.5	52.0	-	-	-	-	-
	4BHS 7-23/40	5.5	4.0	-	-	-	-	-	135.0	131.0	125.0	116.0	96.5	66.0	-	-	-	-	-
4BHS 15-7/15M *	4BHS 15-7/15 *	2.0	1.5	-	-	-	-	-	-	-	30.5	29.3	27.7	25.6	21.5	16.0	9.1	-	-
4BHS 15-10/22M *	4BHS 15-10/22 *	3.0	2.2	-	-	-	-	-	-	-	43.5	42.0	39.5	36.6	30.7	22.9	13.0	-	-
	4BHS 15-13/30 *	4.0	3.0	-	-	-	-	-	-	-	59.0	57.5	54.5	50.5	43.5	34.1	22.1	-	-
	4BHS 15-17/40 *	5.5	4.0	-	-	-	-	-	-	-	77.0	75.0	71.0	66.0	57.0	44.5	28.9	-	-
	4BHS 15-25/55 *	7.5	5.5	-	-	-	-	-	-	-	114.0	110.0	105.0	97.0	83.5	65.5	42.5	-	-

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### DIMENSIONS



# 4BHS

## CENTRIFUGAL BOREHOLE PUMPS, 4"

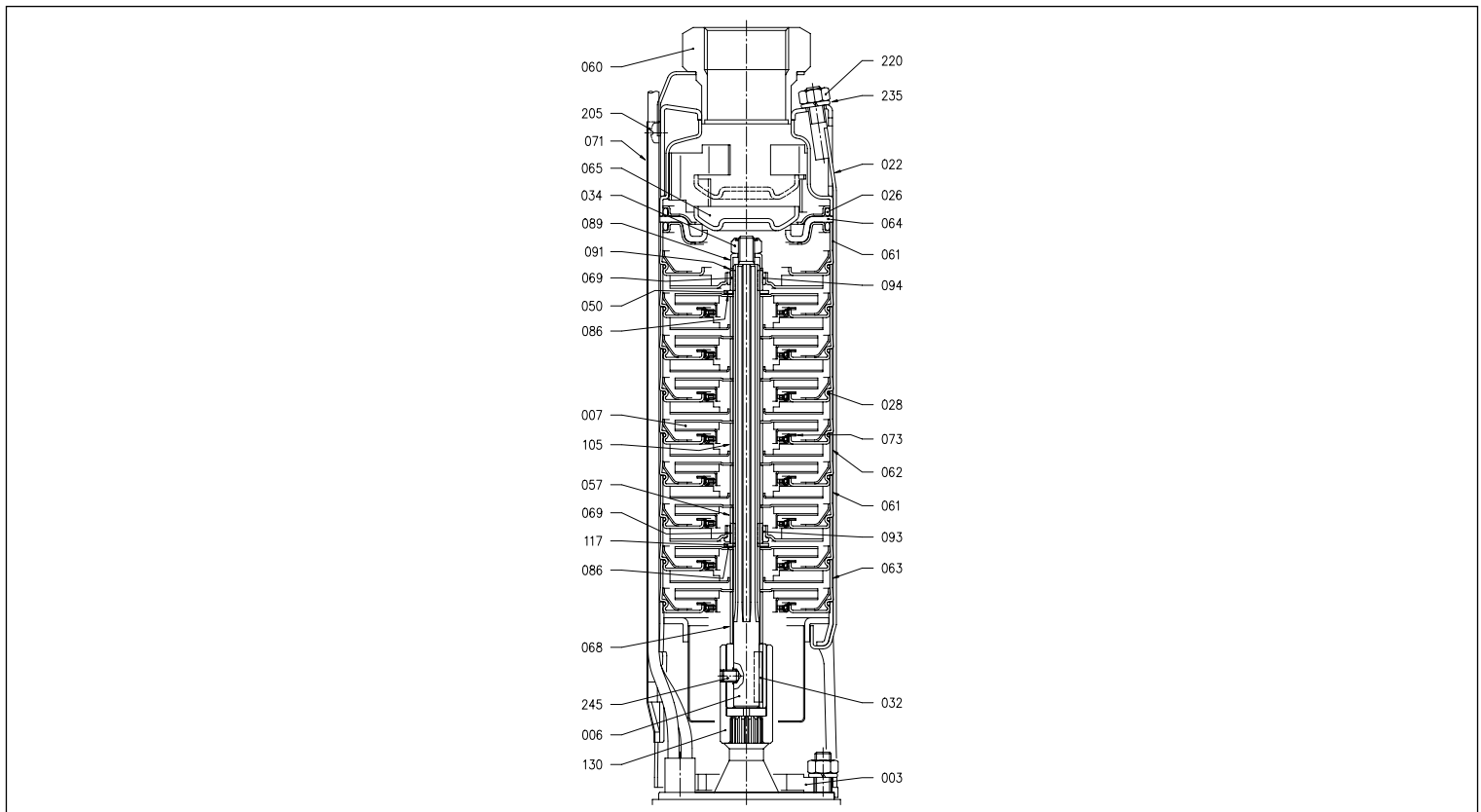
in AISI 304 stainless steel

### DIMENSIONAL TABLE

Model	P:		Pump without motor				Pump with oil filled motor								Pump with water filled motor							
	[HP]	[kW]	H1 [mm]	DNM	Weight [kg]	single phase				three phase				single phase				three phase				
						A [mm]	H2 [mm]	H [mm]	Weight [kg]	A [mm]	H2 [mm]	H [mm]	Weight [kg]	A [mm]	H2 [mm]	H [mm]	Weight [kg]	A [mm]	H2 [mm]	H [mm]	Weight [kg]	
4BHS 2-13/5	0.75	0.55	489	G1¼	6.6	97	325	814	14.2	97	325	814	13.6	91	248	737	15.1	91	228	717	14.4	
4BHS 2-18/7	1.0	0.75	594	G1¼	8.3	97	350	944	17.0	97	325	919	15.9	91	283	877	18.3	91	248	842	16.9	
4BHS 2-27/11	1.5	1.1	783	G1¼	11.0	97	385	1168	21.3	97	350	1133	19.7	91	339	1122	22.8	91	283	1066	20.5	
4BHS 2-36/15	2.0	1.5	972	G1¼	13.8	97	420	1392	25.8	97	385	1357	24.2	91	350	1322	27.5	91	307	1279	24.9	
4BHS 2-44/22	3.0	2.2	1140	G1¼	16.5	97	470	1610	32.0	97	420	1560	30.7	91	437	1577	32.9	91	339	1479	30.3	
4BHS 2-51/22	3.0	2.2	1287	G1¼	18.7	97	470	1757	34.2	97	420	1707	32.9	91	437	1724	35.1	91	339	1626	32.5	
4BHS 4-7/5	0.75	0.55	368	G1½	4.4	97	325	693	12.0	97	325	693	11.4	91	248	616	12.9	91	228	596	12.2	
4BHS 4-10/7	1.0	0.75	431	G1½	5.5	97	350	781	14.2	97	325	756	13.1	91	283	714	15.5	91	248	679	14.1	
4BHS 4-15/11	1.5	1.1	536	G1½	7.2	97	385	921	17.5	97	350	886	15.9	91	339	875	19.0	91	283	819	16.7	
4BHS 4-20/15	2.0	1.5	641	G1½	8.3	97	420	1061	20.3	97	385	1026	18.7	91	350	991	22.0	91	307	948	19.4	
4BHS 4-24/22	3.0	2.2	725	G1½	9.9	97	470	1195	25.4	97	420	1145	24.1	91	437	1162	26.3	91	339	1064	23.7	
4BHS 4-29/22	3.0	2.2	830	G1½	11.5	97	470	1300	27.0	97	420	1250	25.7	91	437	1267	27.9	91	339	1169	25.3	
4BHS 4-36/30	4.0	3.0	977	G1½	14.3	97	-	-	-	97	544	1521	33.3	91	-	-	-	91	394	1371	31.6	
4BHS 4-48/40	5.5	4.0	1229	G1½	17.6	97	-	-	-	97	574	1803	37.6	91	-	-	-	91	543	1772	38.8	
4BHS 7-4/7	1.0	0.75	373	G 2	4.2	97	350	723	12.9	97	325	698	11.8	91	283	656	14.2	91	248	621	12.8	
4BHS 7-7/11	1.5	1.1	468	G 2	5.0	97	385	853	15.3	97	350	818	13.7	91	339	807	16.8	91	283	751	14.5	
4BHS 7-10/15	2.0	1.5	562	G 2	6.6	97	420	982	18.6	97	385	947	17.0	91	350	912	20.3	91	307	869	17.7	
4BHS 7-12/22	3.0	2.2	625	G 2	7.7	97	470	1095	23.2	97	420	1045	21.9	91	437	1062	24.1	91	339	964	21.5	
4BHS 7-14/22	3.0	2.2	688	G 2	8.3	97	470	1158	23.8	97	420	1108	22.5	91	437	1125	24.7	91	339	1027	22.1	
4BHS 7-18/30	4.0	3.0	814	G 2	9.9	97	-	-	-	97	544	1358	28.9	91	-	-	-	91	394	1208	27.2	
4BHS 7-23/40	5.5	4.0	972	G 2	11.5	97	-	-	-	97	574	1546	31.5	91	-	-	-	91	543	1515	32.7	
4BHS 15-7/15 *	2.0	1.5	552	G 2	5.8	97	420	972	17.8	97	385	937	16.2	91	350	902	19.5	91	307	859	16.9	
4BHS 15-10/22 *	3.0	2.2	678	G 2	7.3	97	470	1148	22.8	97	420	1098	21.5	91	437	1115	23.7	91	339	1017	21.1	
4BHS 15-13/30 *	4.0	3.0	804	G 2	8.7	97	-	-	-	97	544	1348	27.7	91	-	-	-	91	394	1198	26.0	
4BHS 15-17/40 *	5.5	4.0	972	G 2	10.7	97	-	-	-	97	574	1546	30.7	91	-	-	-	91	543	1515	31.9	
4BHS 15-25/55 *	7.5	5.5	1308	G 2	14.4	97	-	-	-	97	644	1952	36.8	91	-	-	-	91	653	1961	40.6	

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### SECTIONAL VIEW



The contents of this publication should not be regarded as binding. EBARA Pumps Europe S.p.A. reserves the right to effect any modification it deems necessary, without prior notice.

# 4BHS

## CENTRIFUGAL BOREHOLE PUMPS, 4" in AISI 304 stainless steel

### MATERIALS TABLE

Ref.	Name	Material	Ref.	Name	Material
003	Bracket	EN 1.4301 (AISI 304)	068	Spacer	EN 1.4301 (AISI 304)
006	Shaft	EN 1.4401 (AISI 316)	069	Shaft casing	Tungsten carbide
007	Impeller	EN 1.4301 (AISI 304)	071	Cable cover	EN 1.4301 (AISI 304)
022	Linkage	EN 1.4301 (AISI 304)	073	Clearance ring	EN 1.4301 (AISI 304) + EPDM
026	O-ring	NBR	086	Spacer	EN 1.4301 (AISI 304)
028	O-ring	NBR	089	Shaft washer	EN 1.4301 (AISI 304)
032	Key	EN 1.4401 (AISI 316)	091	Spacer	EN 1.4301 (AISI 304)
034	Impeller nut	EN 1.4301 (AISI 304)	093	Axial bearing	Tungsten carbide
050	Bearing washer	EN 1.4301 (AISI 304)	094	Radial bearing	Tungsten carbide
057	Spacer	EN 1.4301 (AISI 304)	105	Spacer	EN 1.4301 (AISI 304)
060	Delivery port	EN 1.4301 (AISI 304)	117	Anti-friction washer	Tungsten carbide
061	Support stage	EN 1.4301 (AISI 304)	130	Coupling	EN 1.4301 (AISI 304)
062	Intermediate stage	EN 1.4301 (AISI 304)	205	Screw	EN 1.4301 (AISI 304)
063	Suction stage	EN 1.4301 (AISI 304)	220	Nut	EN 1.4301 (AISI 304)
064	Valve seat	EN 1.4301 (AISI 304) + NBR	235	Grower washer	EN 1.4301 (AISI 304)
065	Valve	EN 1.4301 (AISI 304)	245	Set of screws	EN 1.4301 (AISI 304)

### ELECTRICAL DATA TABLE 4BHS WITH MOTOR IN OIL BATH (EBARA MOTORS)

P <sub>i</sub>		Thrust [N]	single phase 230V				three phase 380V				three phase 415V			
[HP]	[kW]		P <sub>i</sub> [kW]	I <sub>n</sub> [A]	I <sub>a</sub> [A]	Power factor	P <sub>i</sub> [kW]	I <sub>n</sub> [A]	I <sub>a</sub> [A]	Power factor	P <sub>i</sub> [kW]	I <sub>n</sub> [A]	I <sub>a</sub> [A]	Power factor
0.75	0.55	1500	0.97	4.5	13.6	0.94	0.94	1.9	7.0	0.75	1.08	2.0	7.0	0.75
1	0.75	1500	1.32	6.0	18.5	0.96	1.17	2.4	10.0	0.74	1.38	2.6	10.0	0.74
1.5	1.1	1500	1.83	8.2	26.0	0.97	1.56	3.2	14.0	0.74	1.81	3.4	14.0	0.74
2	1.5	1500	2.48	11.0	34.0	0.98	2.09	4.4	17.0	0.72	2.38	4.6	17.0	0.72
3	2.2	4400	3.27	14.8	48.0	0.96	-	-	-	-	-	-	-	-
3	2.2	1500	-	-	-	-	3.00	6.0	24.0	0.76	3.39	6.2	24.0	0.76
3	2.2	5000	-	-	-	-	3.02	5.6	23.0	0.82	3.42	5.8	23.0	0.82
4	3	5000	-	-	-	-	4.05	7.7	30.0	0.80	4.49	7.8	30.0	0.80
5.5	4	5000	-	-	-	-	5.24	9.7	45.0	0.82	5.78	9.8	45.0	0.82
7.5	5.5	5000	-	-	-	-	7.37	13.5	55.0	0.83	8.23	13.8	55.0	0.83

### ELECTRICAL DATA TABLE 4BHS WITH MOTOR IN WATER BATH (FRANKLIN MOTORS)

P <sub>i</sub>		Thrust [N]	single phase 230V				three phase 380V				three phase 415V			
[HP]	[kW]		P <sub>i</sub> [kW]	I <sub>n</sub> [A]	I <sub>a</sub> [A]	Power factor	P <sub>i</sub> [kW]	I <sub>n</sub> [A]	I <sub>a</sub> [A]	Power factor	P <sub>i</sub> [kW]	I <sub>n</sub> [A]	I <sub>a</sub> [A]	Power factor
0.75	0.55	3000	0.93	4.3	17.7	0.94	0.83	1.6	7.0	0.79	0.86	1.7	7.7	0.7
1	0.75	3000	1.28	5.7	22.7	0.98	1.07	2.0	10.1	0.81	1.10	2.1	10.9	0.73
1.5	1.1	3000	1.78	8.4	33.9	0.92	1.51	2.8	15.3	0.82	1.54	2.9	16.7	0.74
2	1.5	3000	2.34	10.7	41.7	0.95	2.13	3.9	19.7	0.83	2.10	4.0	21.5	0.73
3	2.2	4000	3.28	14.7	61.8	0.97	2.91	5.4	28.3	0.82	3.00	5.8	30.9	0.72
4	3	4000	-	-	-	-	3.99	7.4	39.9	0.82	4.09	7.9	43.6	0.72
5.5	4	6500	-	-	-	-	5.24	9.7	54.1	0.82	5.38	10.4	59.1	0.72
7.5	5.5	6500	-	-	-	-	7.05	12.6	73.3	0.85	7.08	12.8	80.1	0.77