

4BHS

4" BOREHOLE CENTRIFUGAL ELECTRIC PUMPS

in AISI 304



4" borehole centrifugal pumps built entirely in AISI 304 stainless steel. Suitable for coupling to 4" motors in compliance with NEMA Standards.

APPLICATIONS

- Domestic, agricultural and industrial water supply systems
- Pressure boosting, fire-fighting plants
- Irrigation
- Washing
- Moving clear water in general

TECHNICAL DETAILS

- Reliable and strong
- Corrosion-proof
- Exceptional efficiency due to the smooth surfaces of the impellers and nozzles

PUMP TECHNICAL DATA

- Maximum immersion
 - 350 m (with motor in waterbath)
 - 150 m (motor in bath of liquid refrigerant)
 - Maximum temperature of the liquid: 30°C
 - Maximum sand content: 50 ppm
 - Maximum Chlorine content: 500 ppm
 - Discharge connection: G1¼ (4BHS 2), G1½ (4BHS 4), G2 (4BHS 7-15)
 - The pumps can be supplied as follows:
 - 4BHS pump plus OY motor in bath of liquid refrigerant
 - 4BHS pump plus WY motor in waterbath
 - MEI > 0,4 (4BHS 2 - 4BHS 4 - 4BHS 7)
- For further information please check our Data Book on the web site www.ebara-europe.com

The pump and the motor are supplied separately.

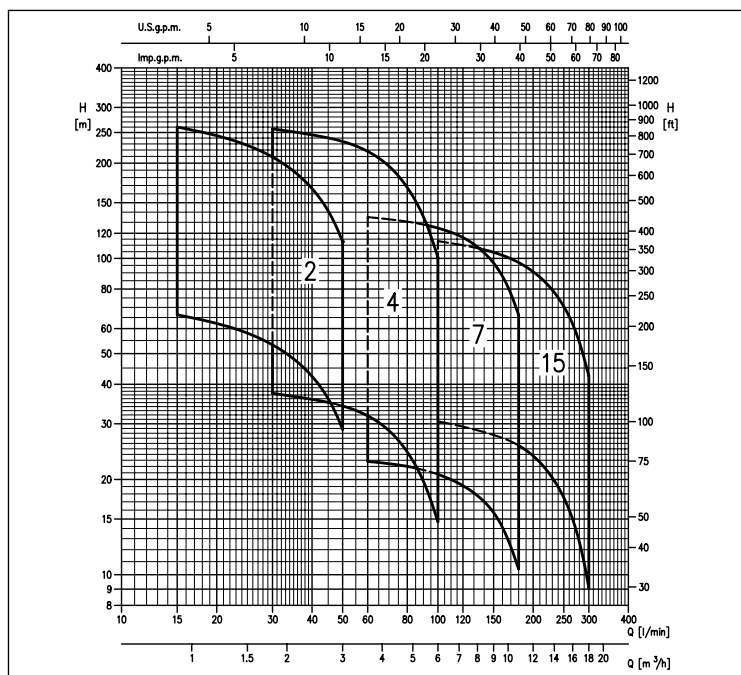
MOTOR TECHNICAL DATA

- 2 poles oil filled motor (OY) or water filled motor (WY)
- Max start-ups per hour: 30 (OY) - 20 (WY)
- Quick coupling for power supply cable
- Class of insulation F (OY) or B (WY)
- IP58 Protection degree (OY) - IP68 (WY)
- 230V (±10%) 50 Hz single phase voltage (OYM), 380-415V (±10%) 50 Hz three phase voltage (OY)
- 230V (-10%± 6%) 50 Hz single phase voltage (WYM), 380-415V (6%-10%) 50 Hz three phase voltage (WY)
- For cables dimensioning please see page 58 or our Data Book on the web site www.ebara-europe.com

MATERIALS

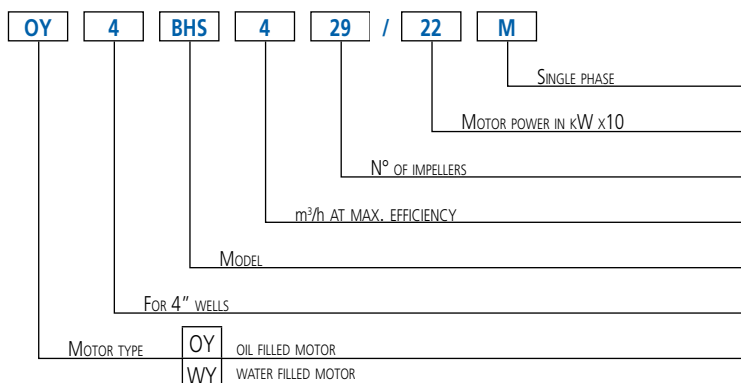
- Motor discharge and motor bracket in moulded stainless steel
- Bracket, inlets, joint, impeller, diffuser, valve, stages, tie-rod and isolating cover in EN 1.4301 (AISI 304)
- Wear rings in EPDM/EN 1.4301 (AISI 304)
- Shaft in EN 1.4401 (AISI 316)
- Radial bearings, axial bearings and friction ring in tungsten carbide

PERFORMANCE RANGE (according to ISO 9906 Attachment A)



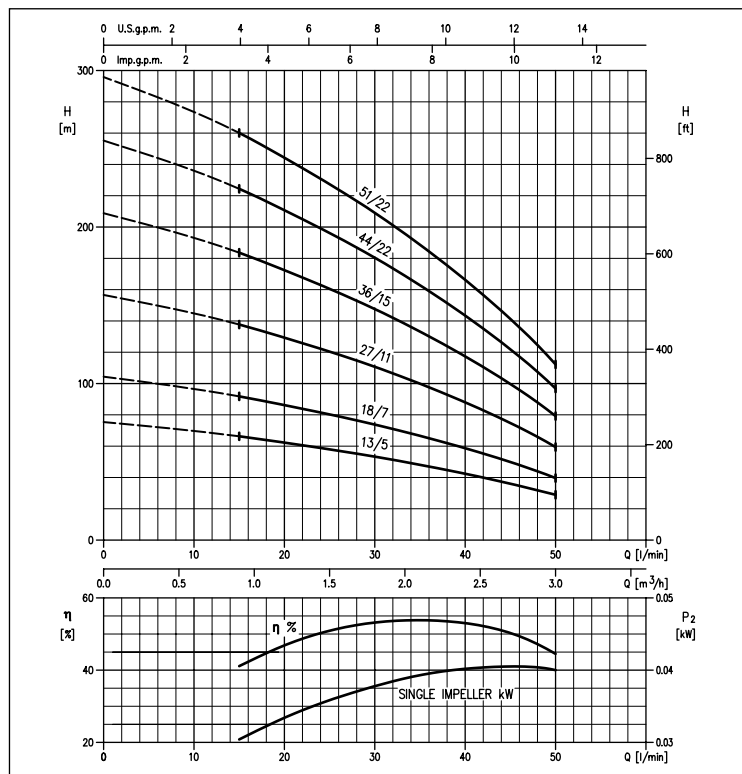
Note: 4BHS 15 models are not available for European market

IDENTIFICATION CODE



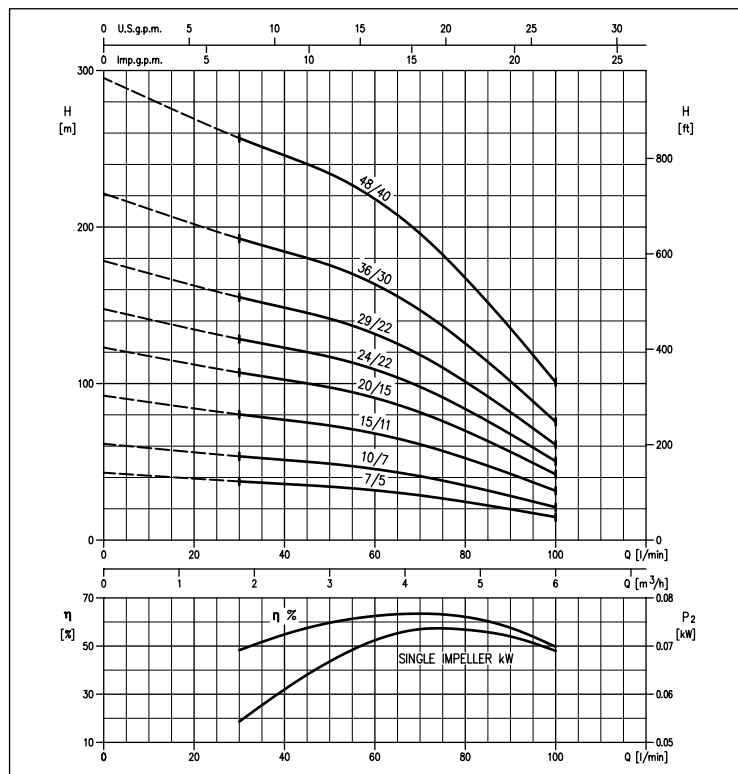
PERFORMANCE CURVES 4BHS 2 series

(according to ISO 9906 Attachment A) - impeller diameter: 70,5 mm



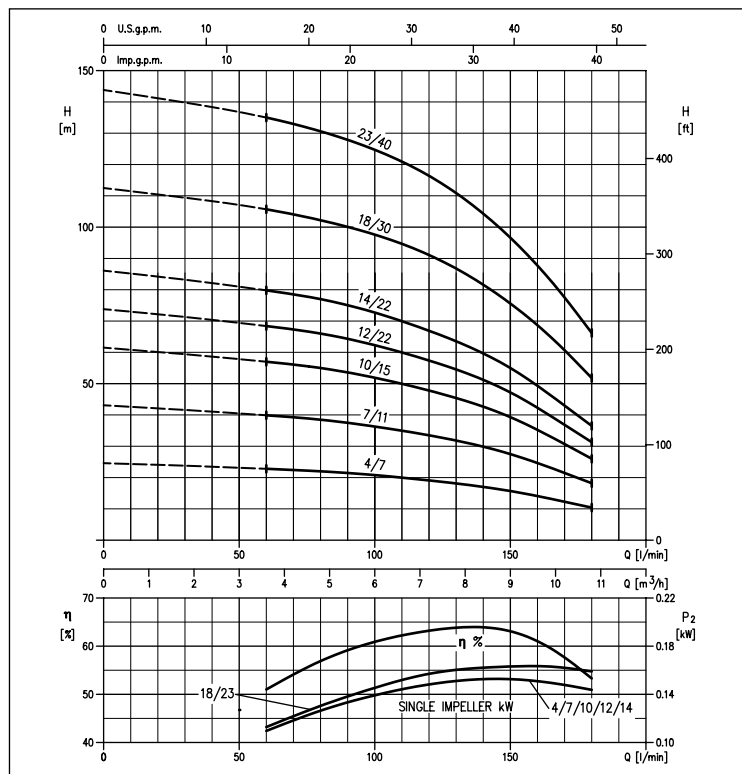
PERFORMANCE CURVES 4BHS 4 series

(according to ISO 9906 Attachment A) - impeller diameter: 72 mm



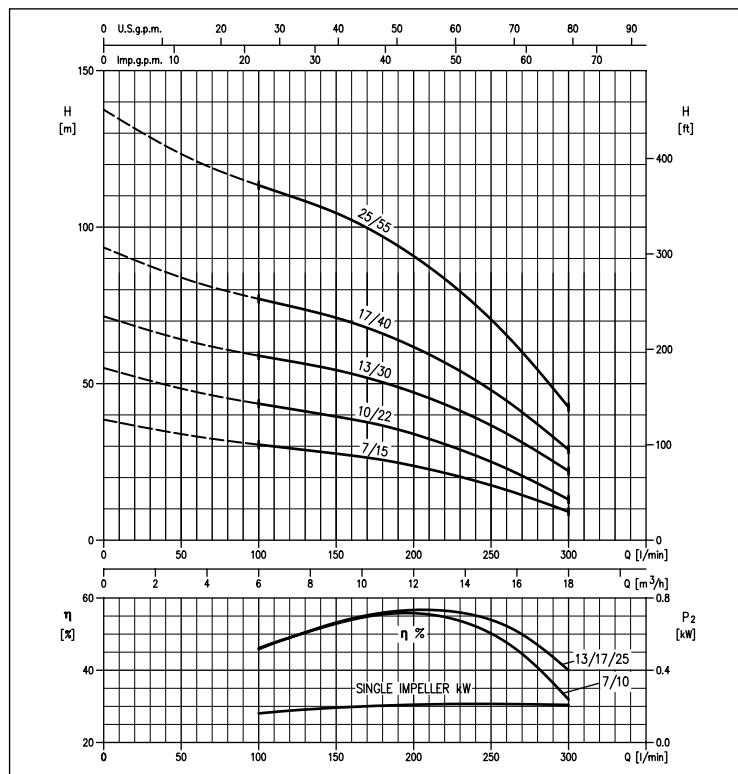
PERFORMANCE CURVES 4BHS 7 series

(according to ISO 9906 Attachment A) - impeller diameter: 74 mm



PERFORMANCE CURVES 4BHS 15 series

(according to ISO 9906 Attachment A) - impeller diameter: 72 mm



Note: 4BHS 15 models are not available for European market

4BHS

4" BOREHOLE CENTRIFUGAL ELECTRIC PUMPS

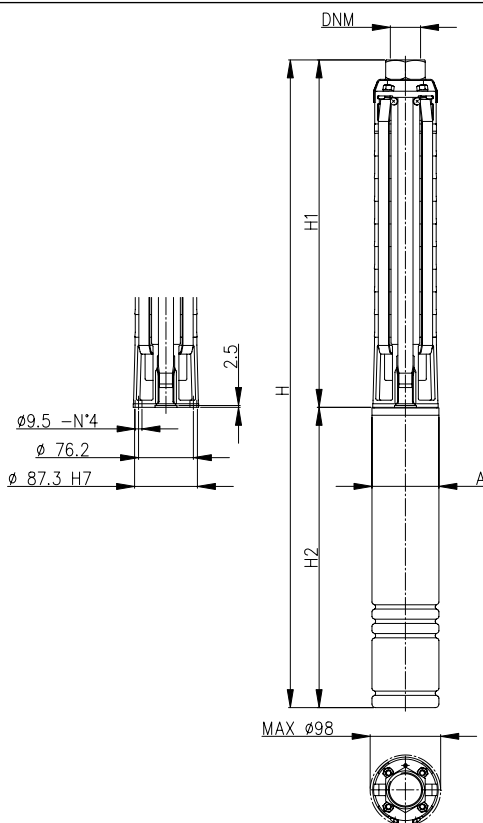
in AISI 304

PERFORMANCE TABLE

Single phase	Model Three phase	P ₂		Q=Flow rate														
				[HP]	[kW]	l/min m³/h	15 0,9	20 1,2	30 1,8	40 2,4	50 3	60 3,6	80 4,8	100 6	120 7,2	150 9	180 10,8	220 13,2
		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	

* Product not available for European market

DIMENSIONS



4BHS

4" BOREHOLE CENTRIFUGAL ELECTRIC PUMPS

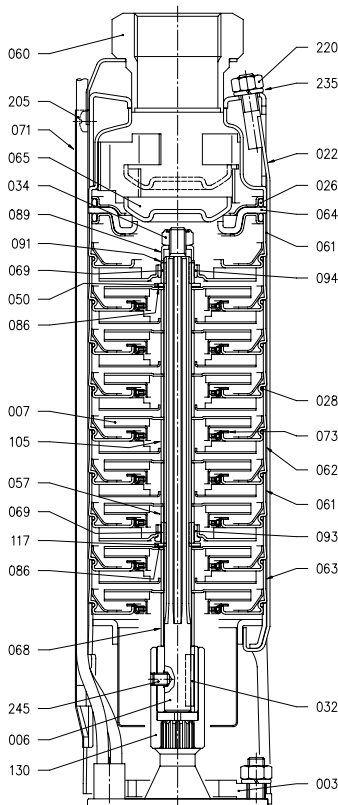
in AISI 304

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		

* Product not available for European market

SECTIONAL VIEW



4" BOREHOLE CENTRIFUGAL ELECTRIC PUMPS

in AISI 304

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	Isolating cover	EN 1.4301 (AISI 304)
022	Tie-rod	EN 1.4301 (AISI 304)	073	Wear 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	Discharge	EN 1.4301 (AISI 304)	117	Anti-friction washer	Tungsten Carbide
061	Support stage	EN 1.4301 (AISI 304)	130	Joint	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	Washer grower	EN 1.4301 (AISI 304)
065	Valve	EN 1.4301 (AISI 304)	245	Set of screws	EN 1.4301 (AISI 304)

ELECTRIC DATA TABLE 4BHS WITH OIL FILLED MOTOR

P _i		Thrust	P _i	Single phase 230V		Power factor	P _i	Three phase 380V		Power factor	P _i	Three phase 415V		Power factor
[HP]	[kW]	[N]	[kW]	I _n [A]	I _A [A]		[kW]	I _n [A]	I _A [A]		[kW]	I _n [A]	I _A [A]	
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

ELECTRIC DATA TABLE 4BHS WITH WATER FILLED MOTOR

P _i		Thrust	P _i	Single phase 230V		Power factor	P _i	Three phase 380V		Power factor	P _i	Three phase 415V		Power factor
[HP]	[kW]	[N]	[kW]	I _n [A]	I _A [A]		[kW]	I _n [A]	I _A [A]		[kW]	I _n [A]	I _A [A]	
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