




Table of contents

 Starlone Technology Introduction	Page. 2
Introduction of Solar Pumping Systems.....	Page. 2
Solar water pump working schematic diagram.....	Page. 3
Connecting diagram for example.....	Page.4
Questionnaire of how to choose the best model.....	Page.5
4" stainless steel submersible pumps (4SP2---4SP14).....	Page. 6
6" stainless steel submersible pumps (6SP17--6SP60).....	Page. 12
8" stainless steel submersible pumps (8SP77--8SP95).....	Page. 16
Applications in the world.....	Page. 20
Contact Us.....	Page. 21

■ Starlone Introduction

Fire Pump Singapore Pte Ltd is the world's leading solution provider of solar agriculture irrigation and water conservancy, professional manufacturer of solar pumping system, solar pump and solar pumping inverter. The products have been applied to agriculture irrigation, desert control, pasture animal husbandry, daily water supply, city waterscape, sea water desalination and so on in over 100 countries and regions around the world.

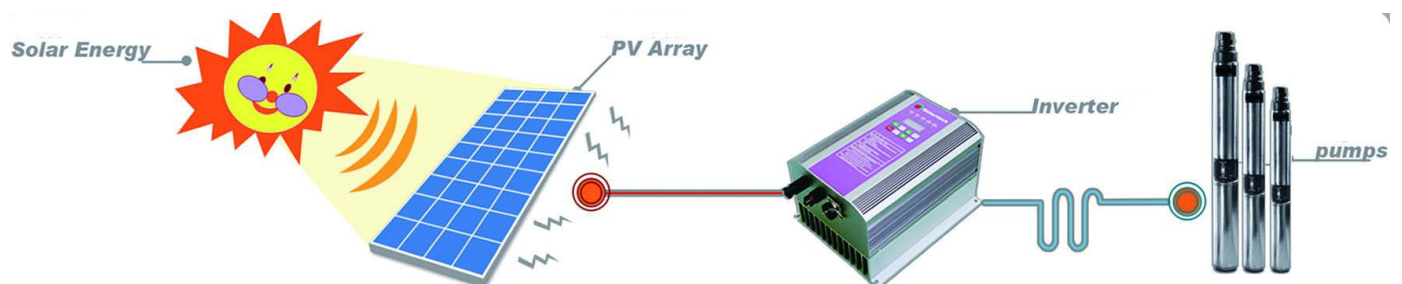
The sustainable solar power gives the pumping system lots of advantages: work at the sunrise and stop at the sunset, guard free, fossil energy free and city grid free. The system works independently and provide a safe and reliable performance. The solar pumping system can work with the drip irrigation, sprinkling irrigation, infiltrating irrigation systems to solve the farmland irrigation problem. This can help improve the output of the farmland and save the water and energy which means less cost of the traditional fuel and electric power. Therefore this is the most effective way the use the clean energy instead of fossil fuel. The new application which fits the national “resource saving, environment friendly, low-carbon and energy saving” development strategy is the solution of global food and energy issue.

■ Introduction of Solar Pumping Systems.



Description:

Solar water pump adopts cutting-edge technology, which applies for domestic house supply, agriculture and industrial use. What's more, we can also provide you with customer-made water pump system, so that you can have the best-ever service. Our pumps vary in flow rate and head/lift (we shall recommend to you the best solution based on your requirement). The flow rate and head/lift are 1-200m³& 10-350m .



1.Solar Cell Array

The solar array, an aggregation of many solar modules connected in series and in parallel, absorbs sunlight radiation and converts it into electrical energy, providing dynamical power for the whole system.

2.Solar Pumping Inverter

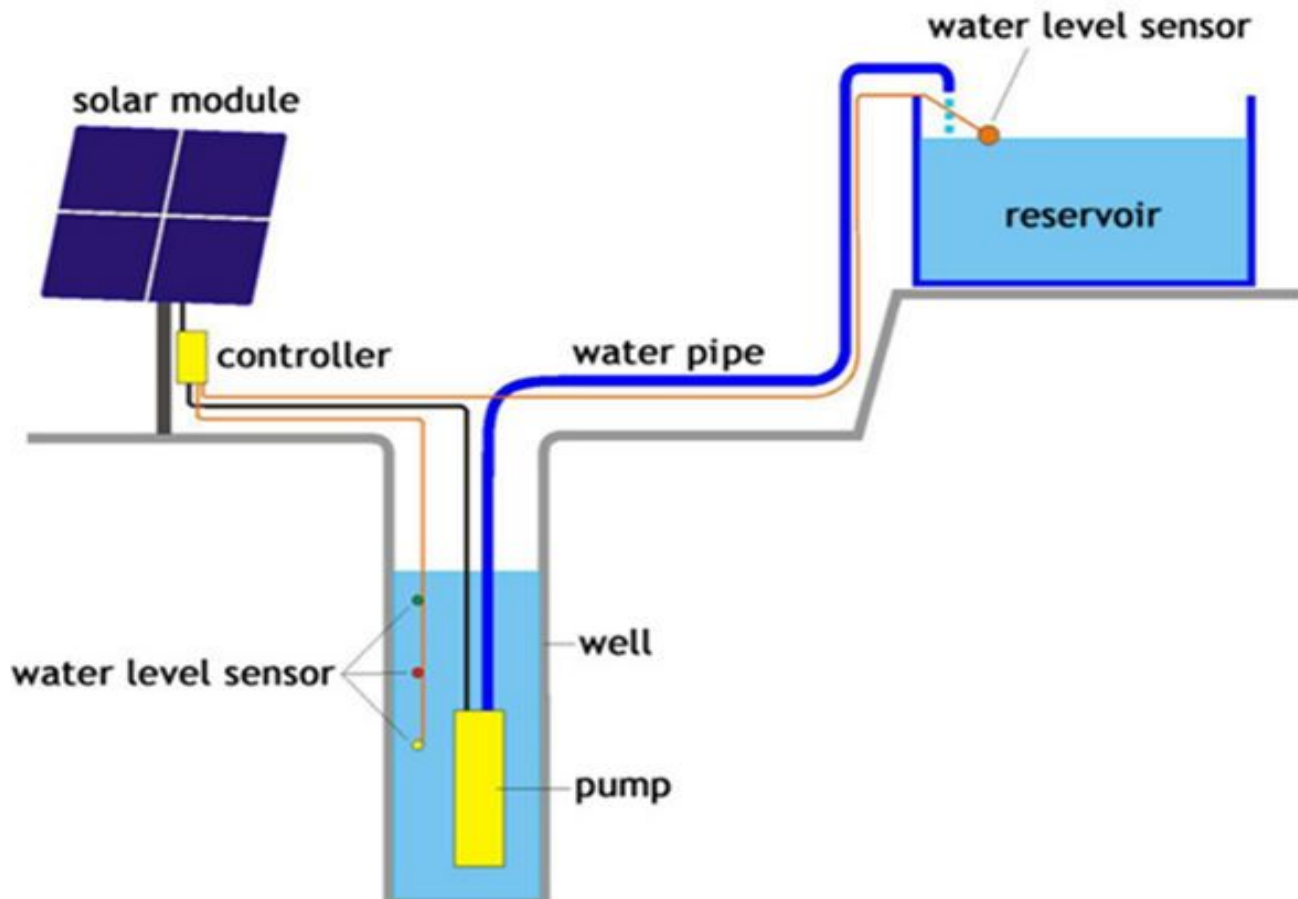
The pumping inverter controls and adjusts the system operation and converts the DC produced by the solar cell array into AC to drive the pump, and adjusts the output frequency in real-time according to the variation of sunlight intensity to realize the maximum power point tracking (MPPT). Advantages are as follows:

1. Patented dynamic VI MPPT algorithm ensuring swift response and stable operation
2. Digital control, automatic operation, data collection and storage for up to 8 years, etc; 98% conversion efficiency, complete protection
3. The system is free of any energy storage devices. Instead, the system stores water. As a result, reliability is improved dramatically comparing to systems requiring energy storage (battery) and at the same time greatly reducing construction and maintenance costs

3.Pump

Any three-phase pump is suitable for solar AC pumping system, pump powered by solar cell arrays draws water from the deep wells or rivers and lakes and pours into the storage tank or reservoir, or directly connects the irrigation system, fountain system, etc. According to the actual system demand and installation condition, different types of pumps such as centrifugal pump, axial flow pump, mixed flow pump or deep well pump can be used.

■ Solar water pump working schematic diagram



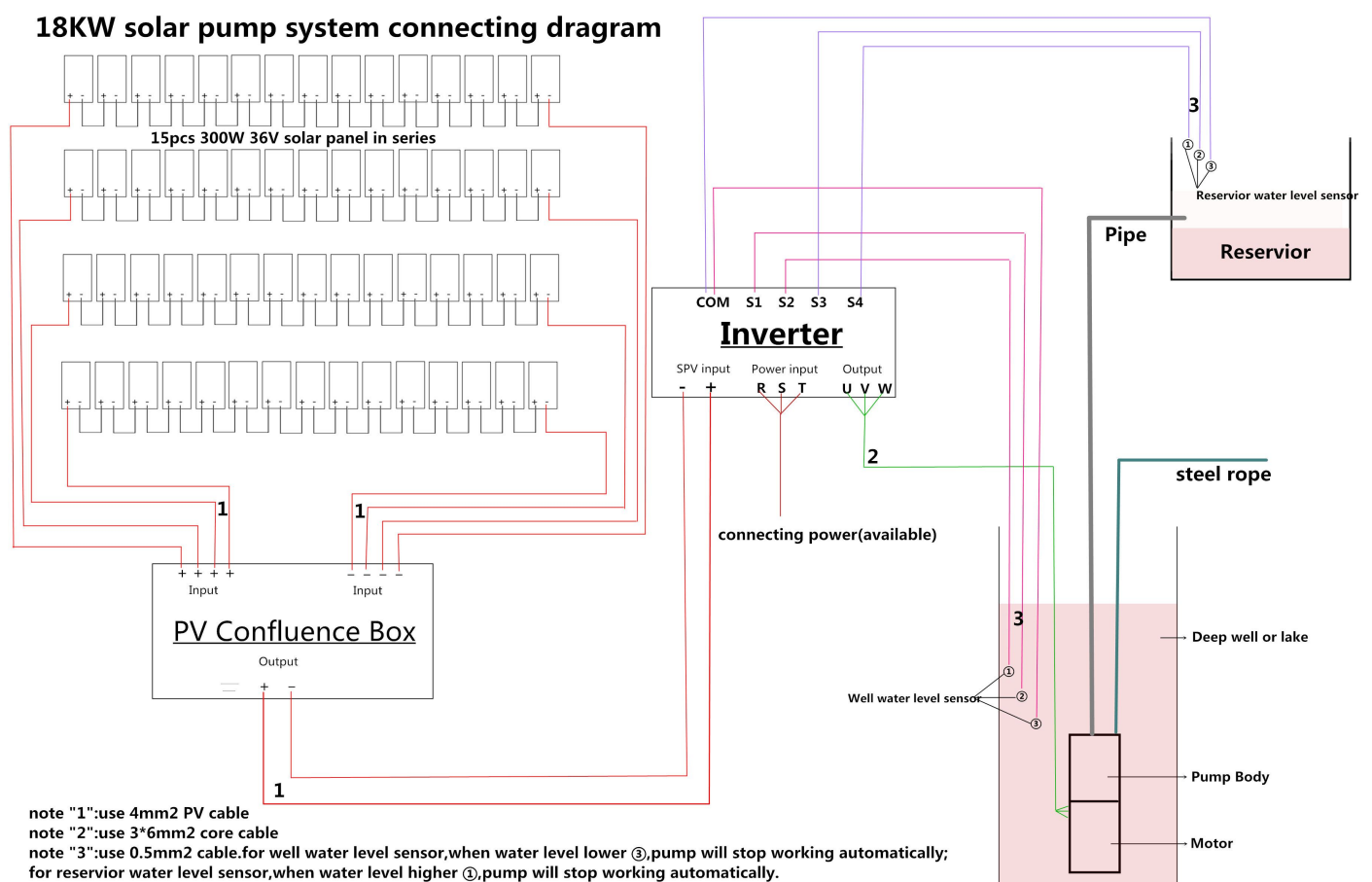
■ Connecting diagram for example.

1)model:6SP30-12, 11KW motor, 6 inch pump body, 11KW inverter.

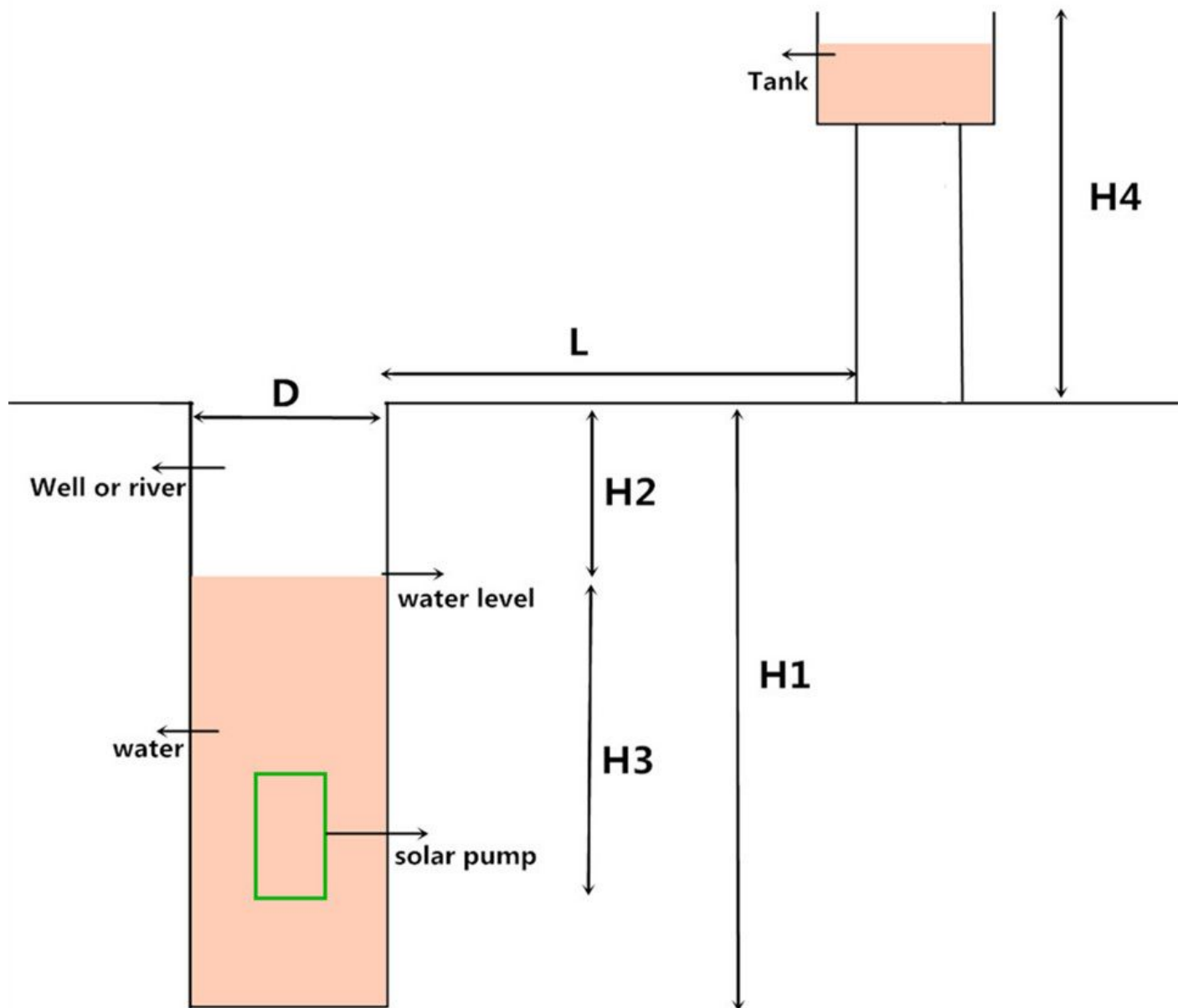
2)Rated flow: 30 m³/h ,Rated head:110m

3)18KW solar panel ,36V 300W/pcs,total 60pcs.15pcs in series as a group,4 group in parallel.

4)complete solar pump system include solar panel ,motor,pump body,inverter,fixing frame structure for solar panel ,junction box,confluence box (need if solar panel total power >18KW),PV cables connecting solar panel,3 lines core cables connecting motor,well level sensor,reservior lever sensor,male-female MC4 connector,MC4 branch connector,cables for level sensor,pipes.



■ Questionnaire of how to choose the best suitable solar pumps.



1. Required water flow.
2. Average sunlights at day.
3. Well depth.
4. Vertical height from water level to ground
5. Vertical height from located solar pump to water level in well.
6. Vertical height from ground to tank (if have).
7. The diameter of well.
8. Distance from well to tank(if have)

$F =$ _____ m^3 /hour
 $S =$ _____ hours
 $H1 =$ _____ meters
 $H2 =$ _____ meters
 $H3 =$ _____ meters
 $H4 =$ _____ meters
 $D =$ _____ inch
 $L =$ _____ meters

According to the required water flow (m^3 /h) and head ($H2+H3+H4$),the best model of solar pumps can be choosed below.

AISI304 SP Series Pump

Electric Submersible multistage pumps for raising clean water from wells, primary water supply tanks and reservoirs

Applications

For pumping clean water

For domestic, civil and industrial applications, including for water supply, irrigation, washdown systems and pressure boosting

Operating conditions

Water temperature: from 1°C to 35°C

Maximum permissible content of suspended sand: 100 g/m³

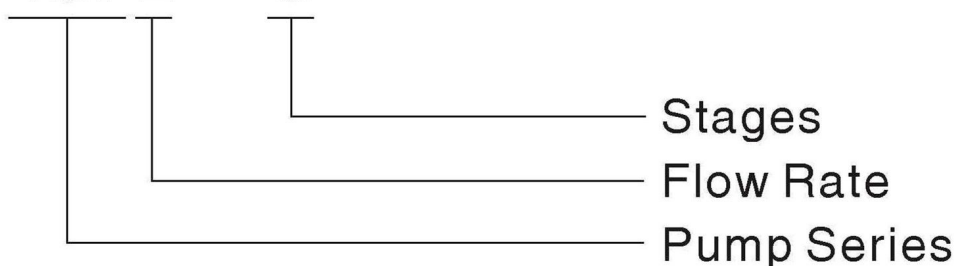
Maximum submerged depth: 150m

Maximum starts per hour: 30

Continuous or intermittent duty.

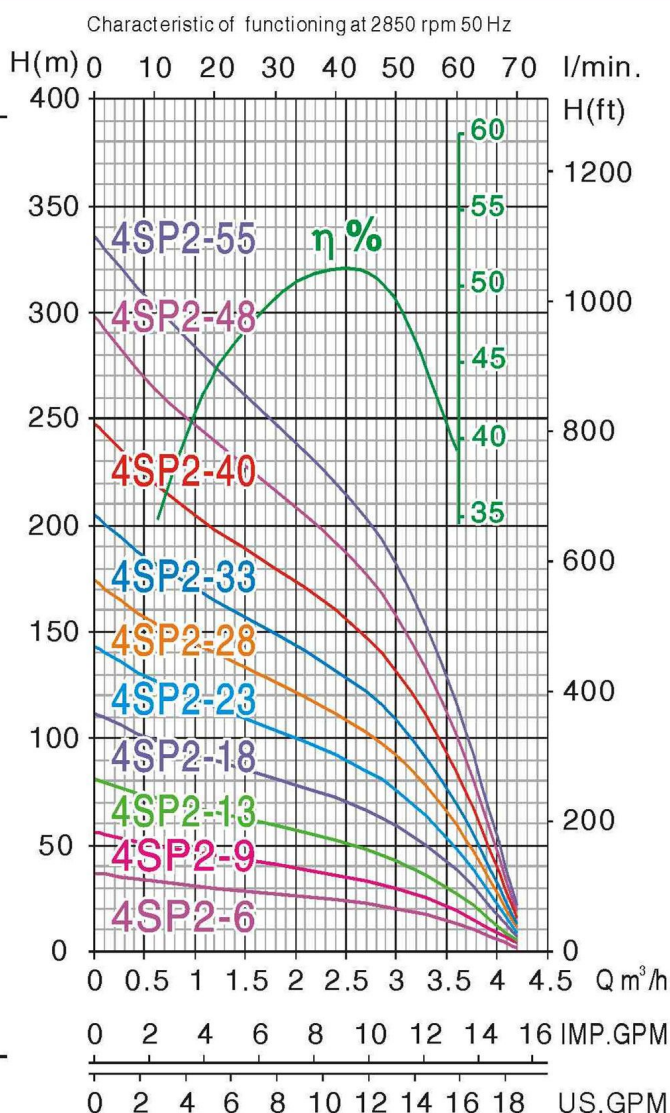
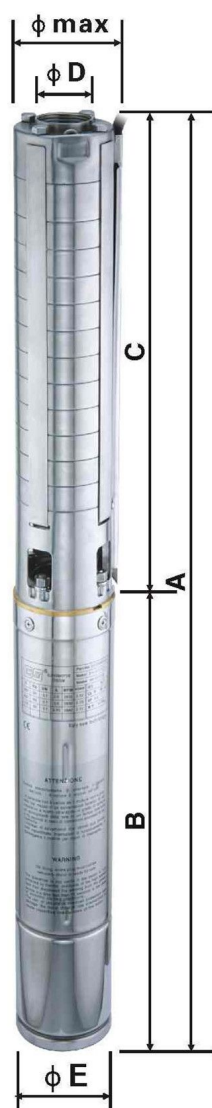
TYPE IDENTIFICATION

4SP2 — 6



- Guarantee: 1 year
- For motor parameter please refer to P69-P80
- Other voltages or frequency 60Hz available on request.

4SP2



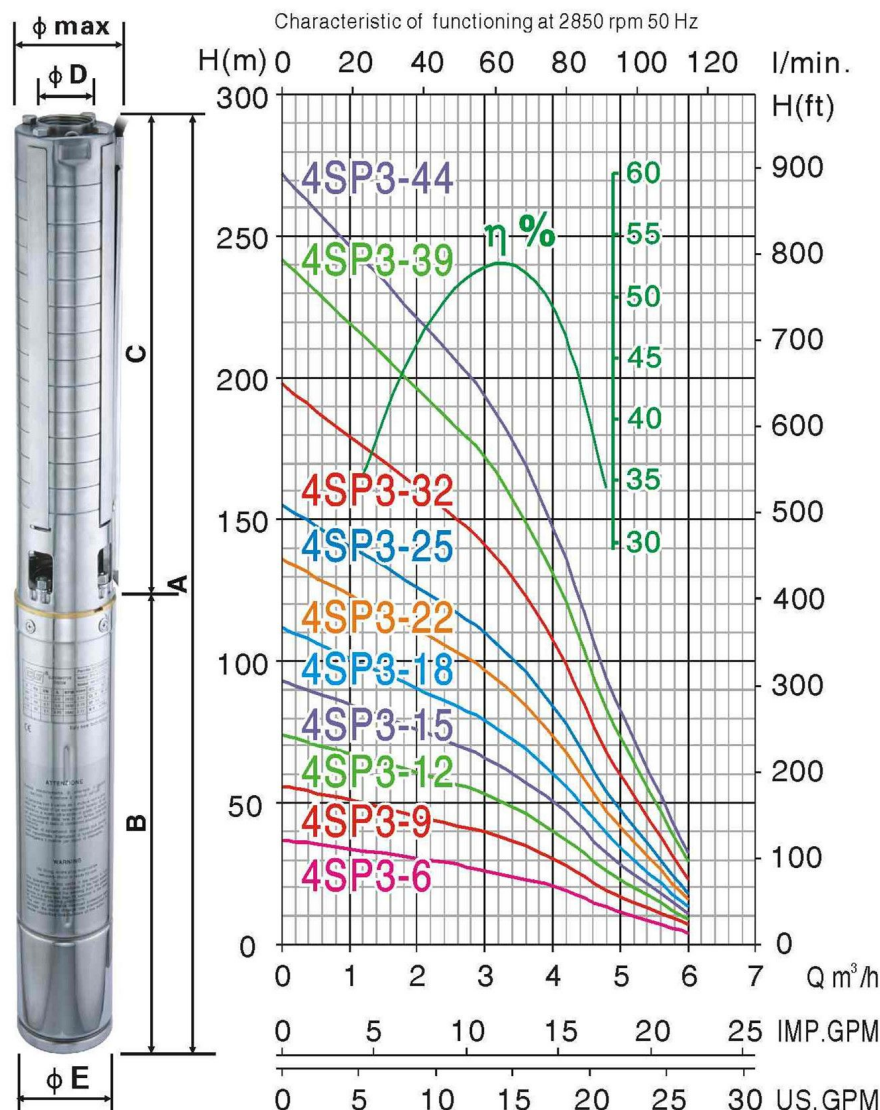
PUMP MATERIALS

Part	Material
Shaft	AlSi304
Coupling	AlSi304
Check valve	AlSi304
Pump body	AlSi304
Impeller	AlSi304
Diffuser	AlSi304
Bearing	Wear resistant rubber
Suction strainer	AlSi304
Suction support	AlSi304
Delivery body	AlSi304

Type	A	B	C	D	E	φ Max
4SP2-6	632	351	281	1" 1/4G	95	93
4SP2-9	695	351	344	1" 1/4G	95	93
4SP2-13	794	366	428	1" 1/4G	95	93
4SP2-18	919	386	533	1" 1/4G	95	93
4SP2-23	1044	406	638	1" 1/4G	95	93
4SP2-28	1184	441	743	1" 1/4G	95	93
4SP2-33	1289	441	848	1" 1/4G	95	93
4SP2-40	1496	501	995	1" 1/4G	95	93
4SP2-48	1664	501	1163	1" 1/4G	95	93
4SP2-55	1871	561	1310	1" 1/4G	95	93

Type	Motor Power		Three phase 380V	Single phase 220V			Q	Capacity							
							m³/h	0	0.6	1.2	1.8	2.4	3	3.6	4.2
							l/min	0	10	20	30	40	50	60	70
(50Hz)	HP	KW	A	A	μF	VC	H m	Total head in meters							
4SP2-6	0.5	0.37	1.8	3.6	15	450		37	33	30	27	24	20	13	2
4SP2-9	0.5	0.37	1.8	3.6	15	450		56	50	45	41	36	30	19	4
4SP2-13	0.75	0.55	2	4.8	20	450		81	72	65	59	52	43	27	5
4SP2-18	1	0.75	2.5	6.3	30	450		112	99	90	81	72	59	38	7
4SP2-23	1.5	1.1	3.4	8.6	40	450		143	127	115	104	92	76	48	9
4SP2-28	2	1.5	4.4	10	50	450		174	154	140	126	112	92	59	11
4SP2-33	2	1.5	4.4	10	50	450		205	182	165	149	132	109	69	13
4SP2-40	3	2.2	6.2	14	60	450		248	220	198	180	160	132	84	16
4SP2-48	3	2.2	6.2	14	60	450		298	264	240	216	192	158	101	19
4SP2-55	4	3	8.3	-	-	-		336	303	275	248	220	182	116	22

4SP3



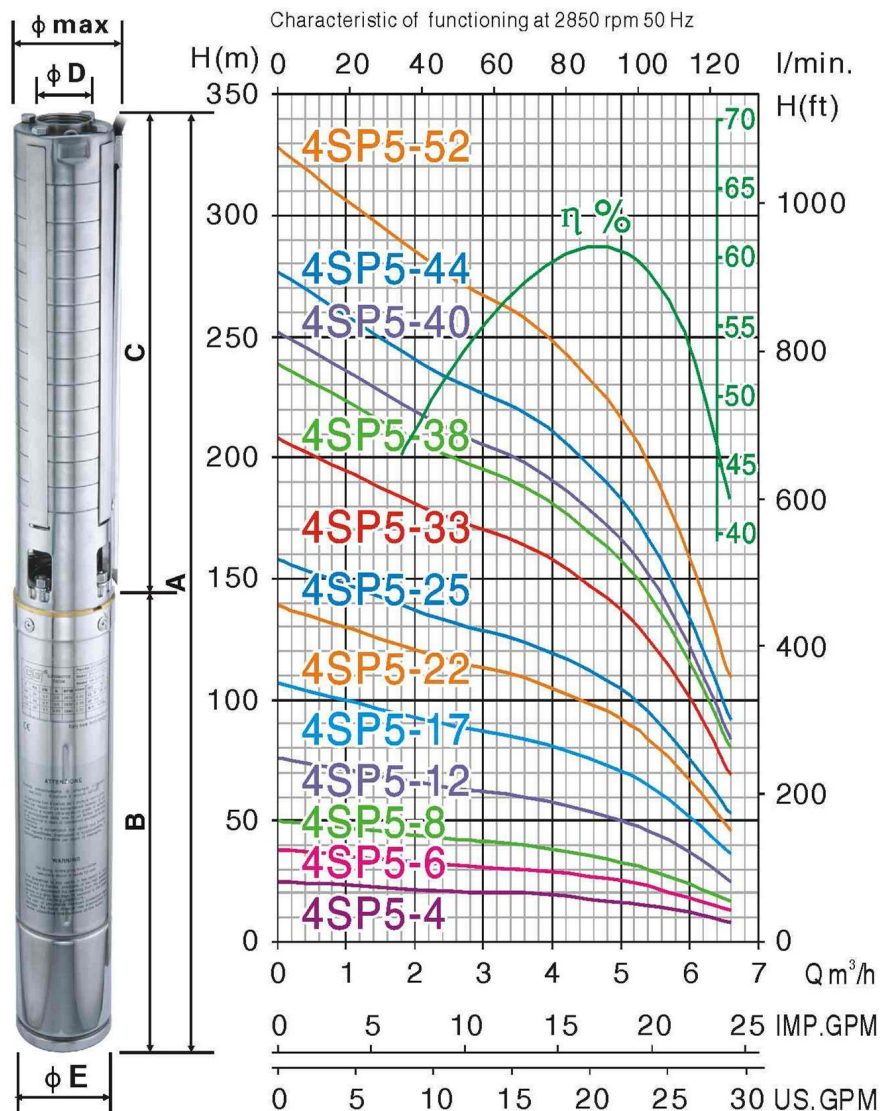
PUMP MATERIALS

Part	Material
Shaft	AISI304
Coupling	AISI304
Check valve	AISI304
Pump body	AISI304
Impeller	AISI304
Diffuser	AISI304
Bearing	Wear resistant rubber
Suction strainer	AISI304
Suction support	AISI304
Delivery body	AISI304

Type	A	B	C	D	E	φ Max
4SP3-6	632	351	281	1" 1/4G	95	93
4SP3-9	710	366	344	1" 1/4G	95	93
4SP3-12	793	386	407	1" 1/4G	95	93
4SP3-15	876	406	470	1" 1/4G	95	93
4SP3-18	939	406	533	1" 1/4G	95	93
4SP3-22	1058	441	617	1" 1/4G	95	93
4SP3-25	1121	441	680	1" 1/4G	95	93
4SP3-32	1328	501	827	1" 1/4G	95	93
4SP3-39	1535	561	974	1" 1/4G	95	93
4SP3-44	1640	561	1079	1" 1/4G	95	93

Type	Motor Power		Three phase 380V	Single phase 220V			Q	Capacity							
							m³/h	0	1.2	2.4	3	3.6	4.2	4.8	6
							l/min	0	20	40	50	60	70	80	100
(50Hz)	HP	kW	A	A	μF	VC	H m	Total head in meters							
4 SP 3 – 6	0.5	0.37	1.8	3.6	15	450		37	33	29	26	23	19	13	4
4 SP 3 – 9	0.75	0.55	2	4.8	20	450		56	50	43	40	35	28	19	7
4SP3–12	1	0.75	2.5	6.3	30	450		74	66	58	53	46	37	26	9
4SP3–15	1.5	1.1	3.4	8.6	40	450		93	83	72	66	57	47	32	11
4SP3–18	1.5	1.1	3.4	8.6	40	450		112	99	86	79	69	56	39	13
4SP3–22	2	1.5	4.4	10	50	450		136	121	106	97	84	68	47	16
4SP3–25	2	1.5	4.4	10	50	450		155	138	120	110	96	78	54	18
4SP3–32	3	2.2	6.2	14	60	450		198	176	154	141	123	99	68	23
4SP3–39	4	3	8.3	-	-	-		242	215	187	172	149	121	83	29
4SP3–44	4	3	8.3	-	-	-		272	242	211	194	169	136	94	32

4SP5



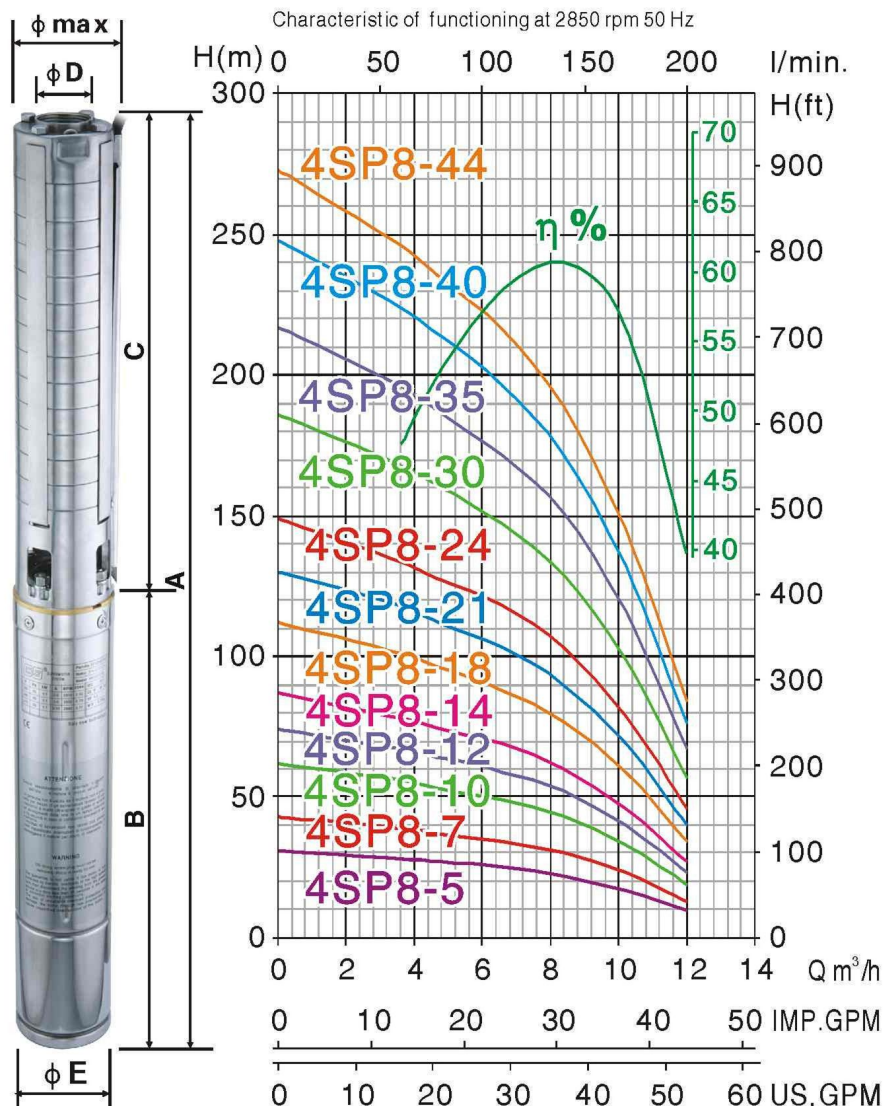
PUMP MATERIALS

Part	Material
Shaft	AISI304
Coupling	AISI304
Check valve	AISI304
Pump body	AISI304
Impeller	AISI304
Diffuser	AISI304
Bearing	Wear resistant rubber
Suction strainer	AISI304
Suction support	AISI304
Delivery body	AISI304

Type	A	B	C	D	E	φ Max
4SP5-4	590	351	239	1" 1/2G	95	93
4SP5-6	647	366	281	1" 1/2G	95	93
4SP5-8	709	386	323	1" 1/2G	95	93
4SP5-12	813	406	407	1" 1/2G	95	93
4SP5-17	953	441	512	1" 1/2G	95	93
4SP5-22	1118	501	617	1" 1/2G	95	93
4SP5-25	1181	501	680	1" 1/2G	95	93
4SP5-33	1409	561	848	1" 1/2G	95	93
4SP5-38	1554	601	953	1" 1/2G	95	93
4SP5-40	1596	601	995	1" 1/2G	95	93
4SP5-44	1680	601	1079	1" 1/2G	95	93
4SP5-52	1968	721	1247	1" 1/2G	95	93

Type	Motor Power		Three phase 380V	Single phase 220V			Q	Capacity						
							m³/h	0	2.4	3.6	4.8	5.4	6	6.6
							l/min	0	40	60	80	90	100	110
(50Hz)	HP	kW	A	A	μF	VC	H m	Total head in meters						
4 SP5 – 4	0.5	0.37	1.8	3.6	15	450		25	21	20	17	15	12	8
4 SP5 – 6	0.75	0.55	2	4.8	20	450		38	32	30	26	23	18	13
4 SP5 – 8	1	0.75	2.5	6.3	30	450		50	43	40	34	30	24	17
4SP5–12	1.5	1.1	3.4	8.6	40	450		76	64	60	52	46	37	25
4SP5–17	2	1.5	4.4	10	50	450		107	90	84	73	65	52	36
4SP5–22	3	2.2	6.2	14	60	450		139	117	109	95	84	67	46
4SP5–25	3	2.2	6.2	14	60	450		158	133	124	108	95	76	53
4SP5–33	4	3	8.3	-	-	-		208	176	164	142	125	101	69
4SP5–38	5.5	4	10.3	-	-	-		239	202	188	163	144	116	80
4SP5–40	5.5	4	10.3	-	-	-		252	213	198	172	152	122	84
4SP5–44	5.5	4	10.3	-	-	-		277	234	218	189	167	134	92
4SP5–52	7.5	5.5	14	-	-	-		328	277	258	224	198	159	109

4SP8



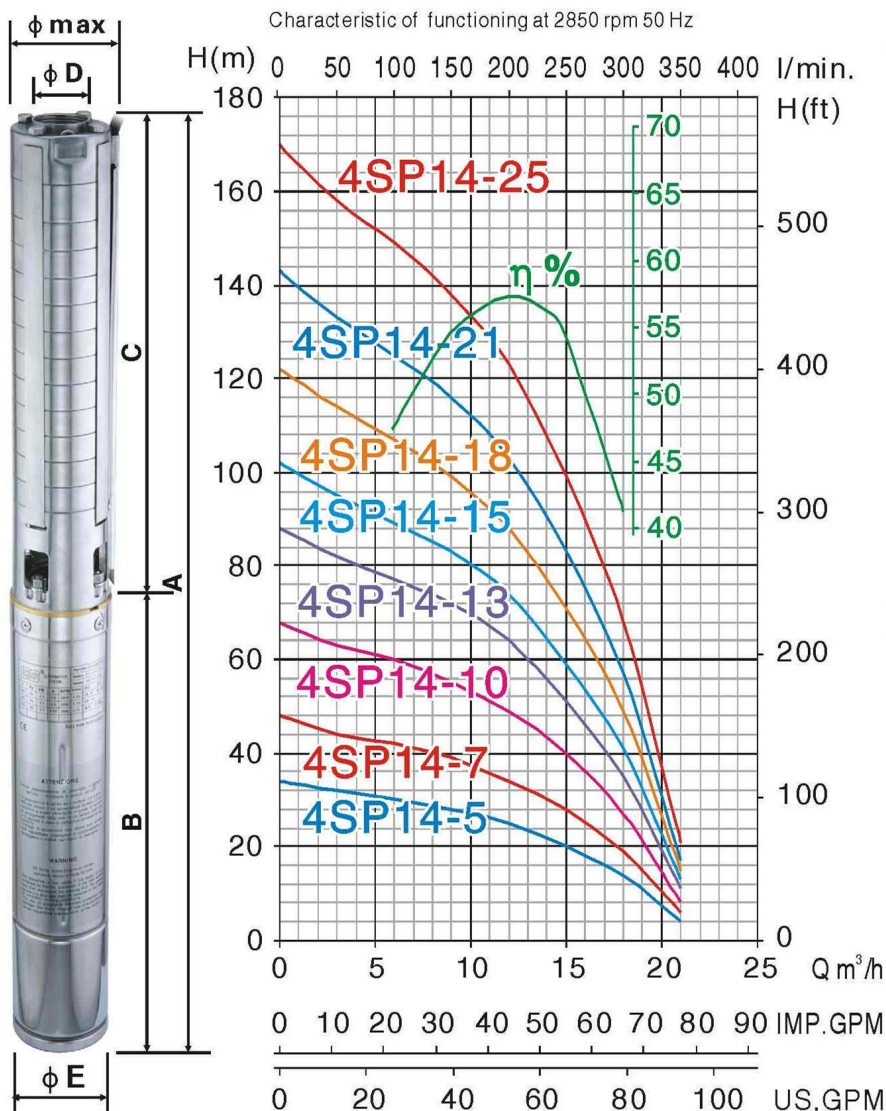
PUMP MATERIALS

Part	Material
Shaft	AISI304
Coupling	AISI304
Check valve	AISI304
Pump body	AISI304
Impeller	AISI304
Diffuser	AISI304
Bearing	Wear resistant rubber
Suction strainer	AISI304
Suction support	AISI304
Delivery body	AISI304

Type	A	B	C	D	E	φ Max
4SP8-5	678.5	386	292.5	2"G	95	93
4SP8-7	753.5	406	347.5	2"G	95	93
4SP8-10	871	441	430	2"G	95	93
4SP8-12	986	501	485	2"G	95	93
4SP8-14	1041	501	540	2"G	95	93
4SP8-18	1211	561	650	2"G	95	93
4SP8-21	1333.5	601	732.5	2"G	95	93
4SP8-24	1416	601	815	2"G	95	93
4SP8-30	1701	721	980	2"G	95	93
4SP8-35	1838.5	721	1117.5	2"G	95	93
4SP8-40	2096	841	1255	2"G	95	93
4SP8-44	2206	841	1365	2"G	95	93

Type	Motor Power		Three phase 380V	Single phase 220V			Q	Capacity						
							m³/h	0	3.6	4.8	6.6	8.4	10.2	12
							l/min	0	60	80	110	140	170	200
(50Hz)	HP	kW	A	A	µF	VC	H m	Total head in meters						
4 SP 8 – 5	1	0.75	2.5	6.3	30	450		31	28	27	25	22	17	10
4 SP 8 – 7	1.5	1.1	3.4	8.6	40	450		43	39	37	34	30	23	13
4SP8–10	2	1.5	4.4	10	50	450		62	56	53	49	43	33	19
4SP8–12	3	2.2	6.2	14	60	450		74	67	64	59	52	40	23
4SP8–14	3	2.2	6.2	14	60	450		87	78	74	69	60	46	27
4SP8–18	4	3	8.3	-	-	-		112	101	95	88	77	59	34
4SP8–21	5.5	4	10.3	-	-	-		130	118	111	103	90	69	40
4SP8–24	5.5	4	10.3	-	-	-		149	134	127	118	103	79	46
4SP8–30	7.5	5.5	14	-	-	-		186	168	159	147	129	99	57
4SP8–35	7.5	5.5	14	-	-	-		217	196	186	171	151	116	67
4SP8–40	10	7.5	18.5	-	-	-		248	224	212	196	172	132	76
4SP8–44	10	7.5	18.5	-	-	-		273	246	233	216	189	145	84

4SP14



PUMP MATERIALS

Part	Material
Shaft	AISI304
Coupling	AISI304
Check valve	AISI304
Pump body	AISI304
Impeller	AISI304
Diffuser	AISI304
Bearing	Wear resistant rubber
Suction strainer	AISI304
Suction support	AISI304
Delivery body	AISI304

Type	A	B	C	D	E	φ Max
4SP14-5	806	441	365	2"G	95	93
4SP14-7	950	501	449	2"G	95	93
4SP14-10	1136	561	575	2"G	95	93
4SP14-13	1302	601	701	2"G	95	93
4SP14-15	1506	721	785	2"G	95	93
4SP14-18	1632	721	911	2"G	95	93
4SP14-21	1878	841	1037	2"G	95	93
4SP14-25	2046	841	1205	2"G	95	93

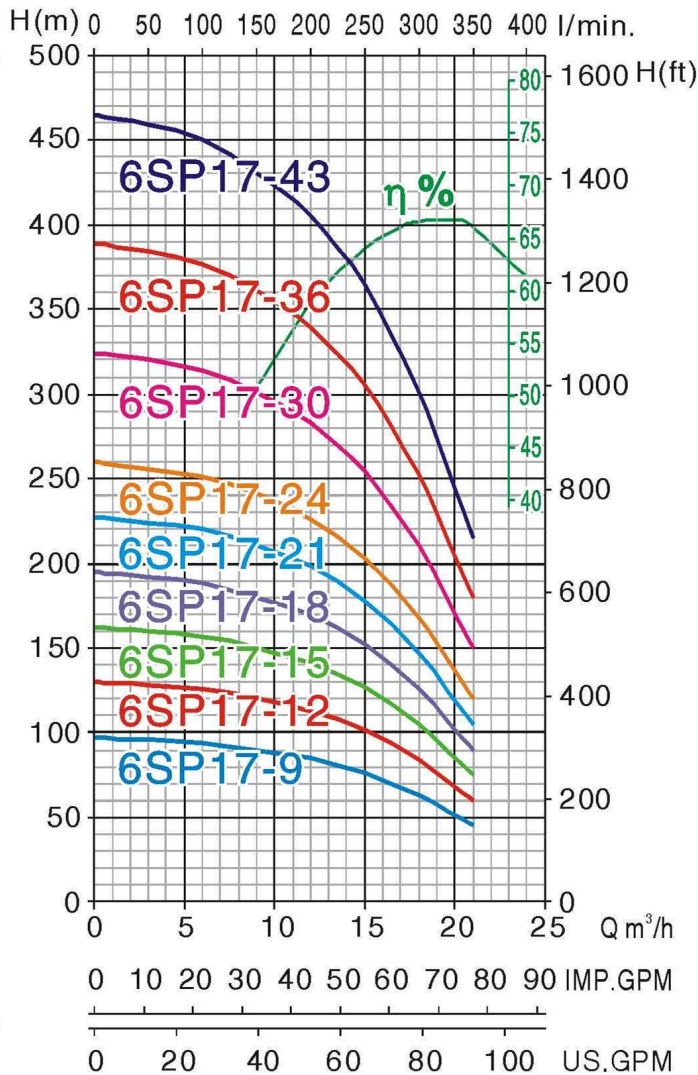
Type	Motor Power		Three phase 380V	Single phase 220V			Q	Capacity							
							m³/h	0	3	6	9	12	15	18	21
							l/min	0	50	100	150	200	250	300	350
(50Hz)	HP	kW	A	A	μF	VC	H m	Total head in meters							
4SP14-5	2	1.5	4.4	10	50	450		34	32	30	28	25	20	14	4
4SP14-7	3	2.2	6.2	14	60	450		48	44	42	39	34	28	19	6
4SP14-10	4	3	8.3	-	-	-		68	63	60	55	49	40	27	8
4SP14-13	5.5	4	10.3	-	-	-		88	82	77	72	64	51	35	11
4SP14-15	7.5	5.5	14	-	-	-		102	95	89	83	74	59	41	13
4SP14-18	7.5	5.5	14	-	-	-		122	114	107	99	88	71	49	15
4SP14-21	10	7.5	18.5	-	-	-		143	133	125	116	103	83	57	17
4SP14-25	10	7.5	18.5	-	-	-		170	158	149	138	123	99	68	21



6SP17



Characteristic of functioning at 2850 rpm 50 Hz



PUMP MATERIALS

Part	Material
Shaft	AISI304
Check valve	AISI304
Coupling	AISI304
Pump body	AISI304
Impeller	AISI304
Diffuser	AISI304
Bearing	Wear resistant rubber
Suction strainer	AISI304
Suction support	AISI304
Delivery body	AISI304

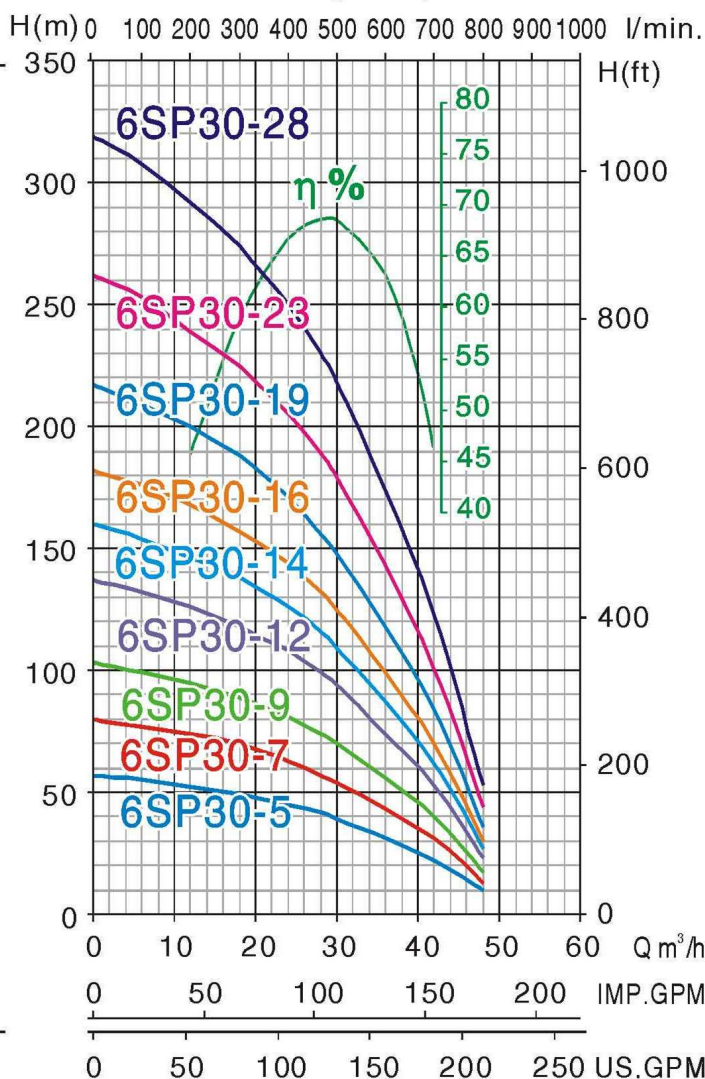
Type	A	B	C	D	E	φ Max
6SP17-9	1424	748	676	3"G	144	145
6SP17-12	1594	783	811	3"G	144	145
6SP17-15	1759	813	946	3"G	144	145
6SP17-18	1919	838	1081	3"G	144	145
6SP17-21	2084	868	1216	3"G	144	145
6SP17-24	2274	923	1351	3"G	144	145
6SP17-30	2594	973	1621	3"G	144	145
6SP17-36	2914	1023	1891	3"G	144	145
6SP17-43	3274	1068	2206	3"G	144	145

Type	Motor Power		Three phase 380V	Q	Capacity							
				m³/h	0	3	6	9	12	15	18	21
				l/min	0	50	100	150	200	250	300	350
(50Hz)	HP	kW	A	H m	Total head in meters							
6SP17-9	7.5	5.5	13		97	96	94	90	85	76	63	45
6SP17-12	10	7.5	17		130	128	126	120	113	102	84	60
6SP17-15	12.5	9.2	21		162	160	157	150	141	127	105	75
6SP17-18	15	11	24		195	192	188	180	170	152	126	90
6SP17-21	17.5	13	28		227	224	220	210	198	178	147	105
6SP17-24	20	15	32		260	256	251	241	226	203	168	120
6SP17-30	25	18.5	40		324	320	314	301	283	254	210	150
6SP17-36	30	22	46		389	384	377	361	339	305	252	180
6SP17-43	35	26	54		465	459	450	431	405	364	301	215

6SP30



Characteristic of functioning at 2850 rpm 50 Hz



PUMP MATERIALS

Part	Material
Shaft	AISI304
Check valve	AISI304
Coupling	AISI304
Pump body	AISI304
Impeller	AISI304
Diffuser	AISI304
Bearing	Wear resistant rubber
Suction strainer	AISI304
Suction support	AISI304
Delivery body	AISI304

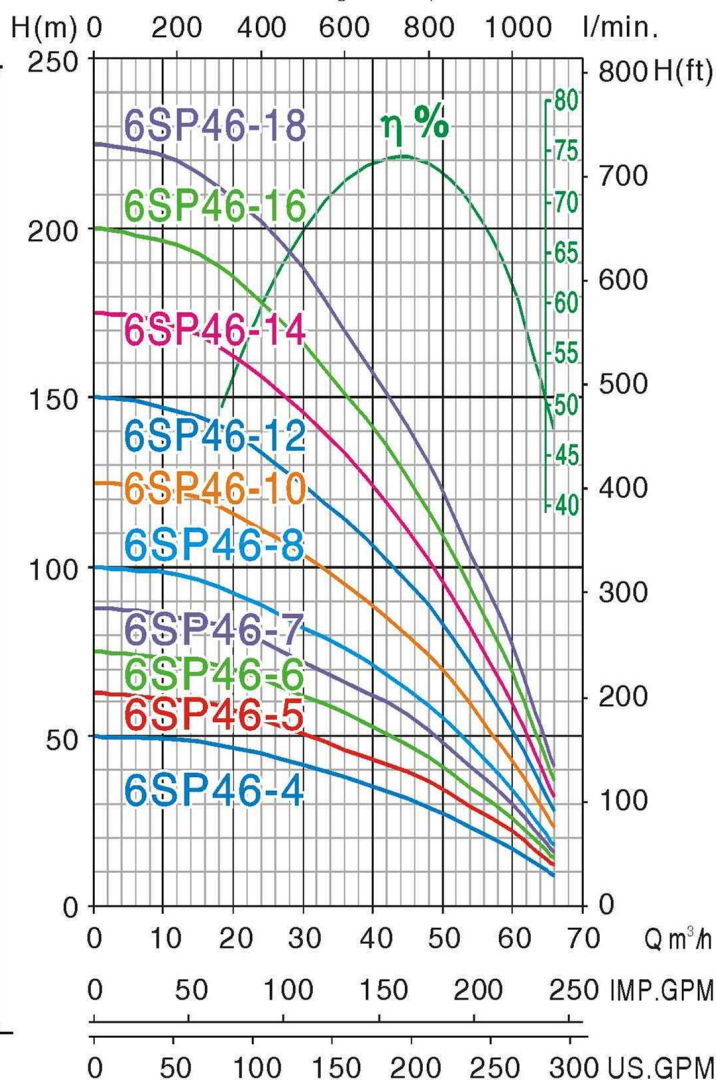
Type	A	B	C	D	E	ϕ_{Max}
6SP30-5	1301.5	748	553.5	3"G	144	145
6SP30-7	1449.5	783	666.5	3"G	144	145
6SP30-9	1592.5	813	779.5	3"G	144	145
6SP30-12	1787	838	949	3"G	144	145
6SP30-14	1930	868	1062	3"G	144	145
6SP30-16	2098	923	1175	3"G	144	145
6SP30-19	2317.5	973	1344.5	3"G	144	145
6SP30-23	2593.5	1023	1570.5	3"G	144	145
6SP30-28	2921	1068	1853	3"G	144	145

Type	Motor Power		Three phase 380V	Q	Capacity							
				m³/h	0	12	18	24	28	30	36	48
				l/min	0	200	300	400	467	500	600	800
(50Hz)	HP	kW	A	H m	Total head in meters							
6SP30-5	7.5	5.5	13		57	52	49	45	42	39	31	10
6SP30-7	10	7.5	17		80	74	70	63	57	54	43	13
6SP30-9	12.5	9.2	21		103	95	89	81	74	70	56	17
6SP30-12	15	11	24		137	126	118	108	99	94	74	23
6SP30-14	17.5	13	28		160	146	138	126	116	109	87	27
6SP30-16	20	15	32		182	168	157	144	132	125	99	30
6SP30-19	25	18.5	40		217	200	188	171	156	148	118	36
6SP30-23	30	22	46		262	239	225	205	189	179	143	44
6SP30-28	35	26	54		319	292	274	250	230	218	174	53

6SP46



Characteristic of functioning at 2850 rpm 50 Hz



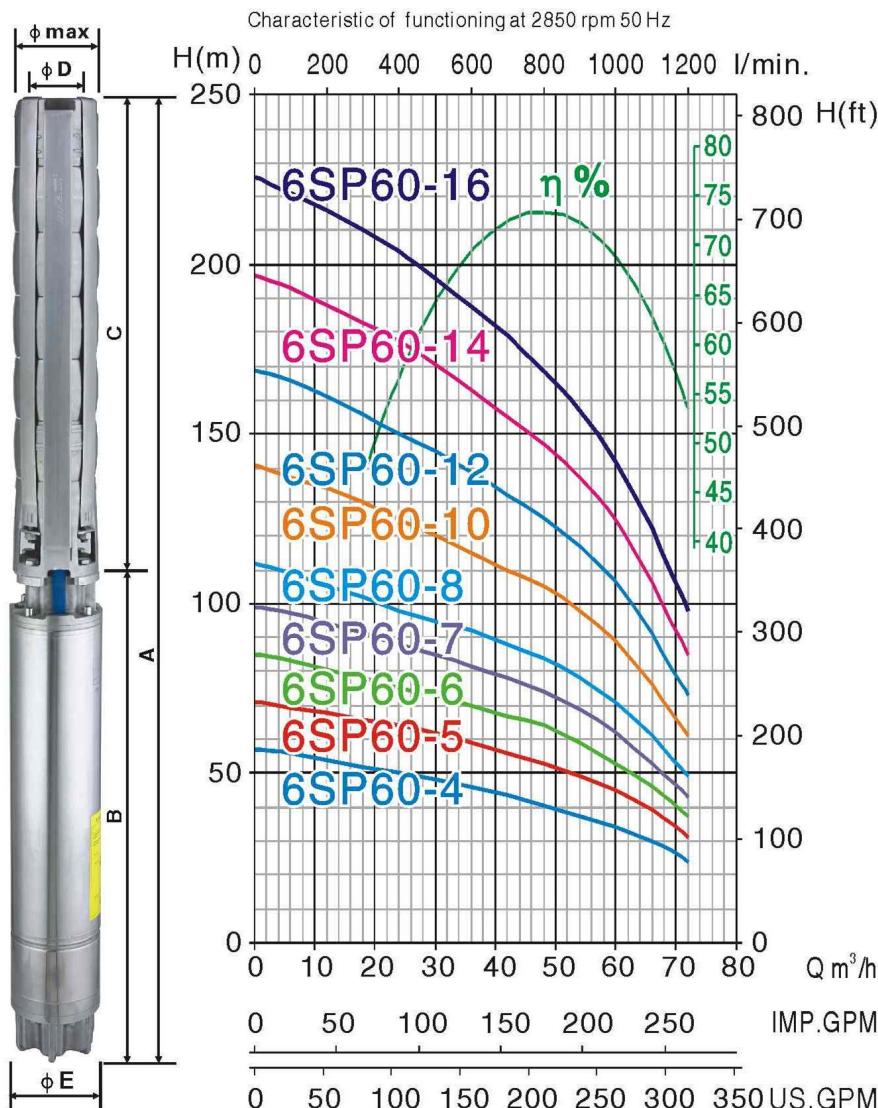
PUMP MATERIALS

Part	Material
Shaft	AISI304
Check valve	AISI304
Coupling	AISI304
Pump body	AISI304
Impeller	AISI304
Diffuser	AISI304
Bearing	Wear resistant rubber
Suction strainer	AISI304
Suction support	AISI304
Delivery body	AISI304

Type	A	B	C	D	E	φ Max
6SP46-4	1505.2	783	722.2	3"G	144	145
6SP46-5	1618	783	835	3"G	144	145
6SP46-6	1760.8	813	947.8	3"G	144	145
6SP46-7	1898.6	838	1060.6	3"G	144	145
6SP46-8	2041.4	868	1173.4	3"G	144	145
6SP46-10	2322	923	1399	3"G	144	145
6SP46-12	2597.6	973	1624.6	3"G	144	145
6SP46-14	2873.2	1023	1850.2	3"G	144	145
6SP46-16	3143.8	1068	2075.8	3"G	144	145
6SP46-18	3424.4	1123	2301.4	3"G	144	145

Type	Motor Power		Three phase 380V	Q	Capacity							
					m³/h							
					0	24	30	36	42	48	54	66
(50Hz)	HP	kW	A	H m	l/min							
					0	400	500	600	700	800	900	1100
					Total head in meters							
6SP46-4	10	7.5	17	H m	50	44	40	37	34	30	23	9
6SP46-5	10	7.5	17		63	55	51	46	42	37	29	12
6SP46-6	12.5	9.2	21		75	67	62	57	51	44	35	14
6SP46-7	15	11	24		88	78	72	66	60	52	41	16
6SP46-8	17.5	13	28		100	89	82	76	68	59	46	18
6SP46-10	20	15	32		125	111	104	94	85	74	58	23
6SP46-12	25	18.5	40		150	134	124	114	102	89	70	28
6SP46-14	30	22	46		175	155	144	133	119	102	81	32
6SP46-16	35	26	54		200	178	166	151	136	118	93	37
6SP46-18	40	30	62		225	202	188	170	151	131	104	41

6SP60



PUMP MATERIALS

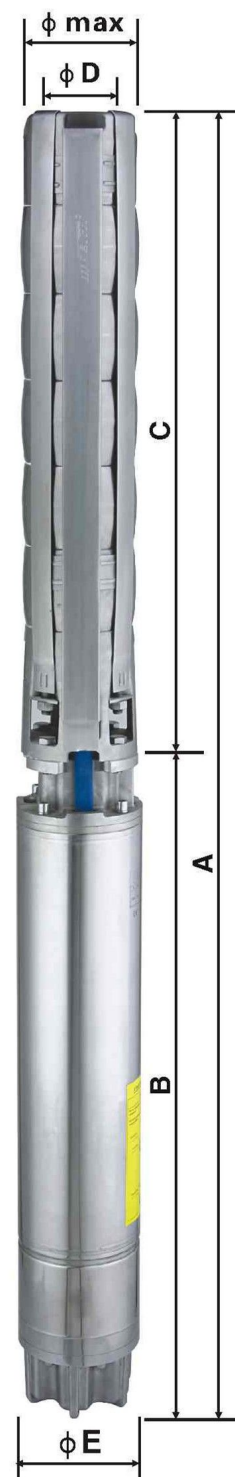
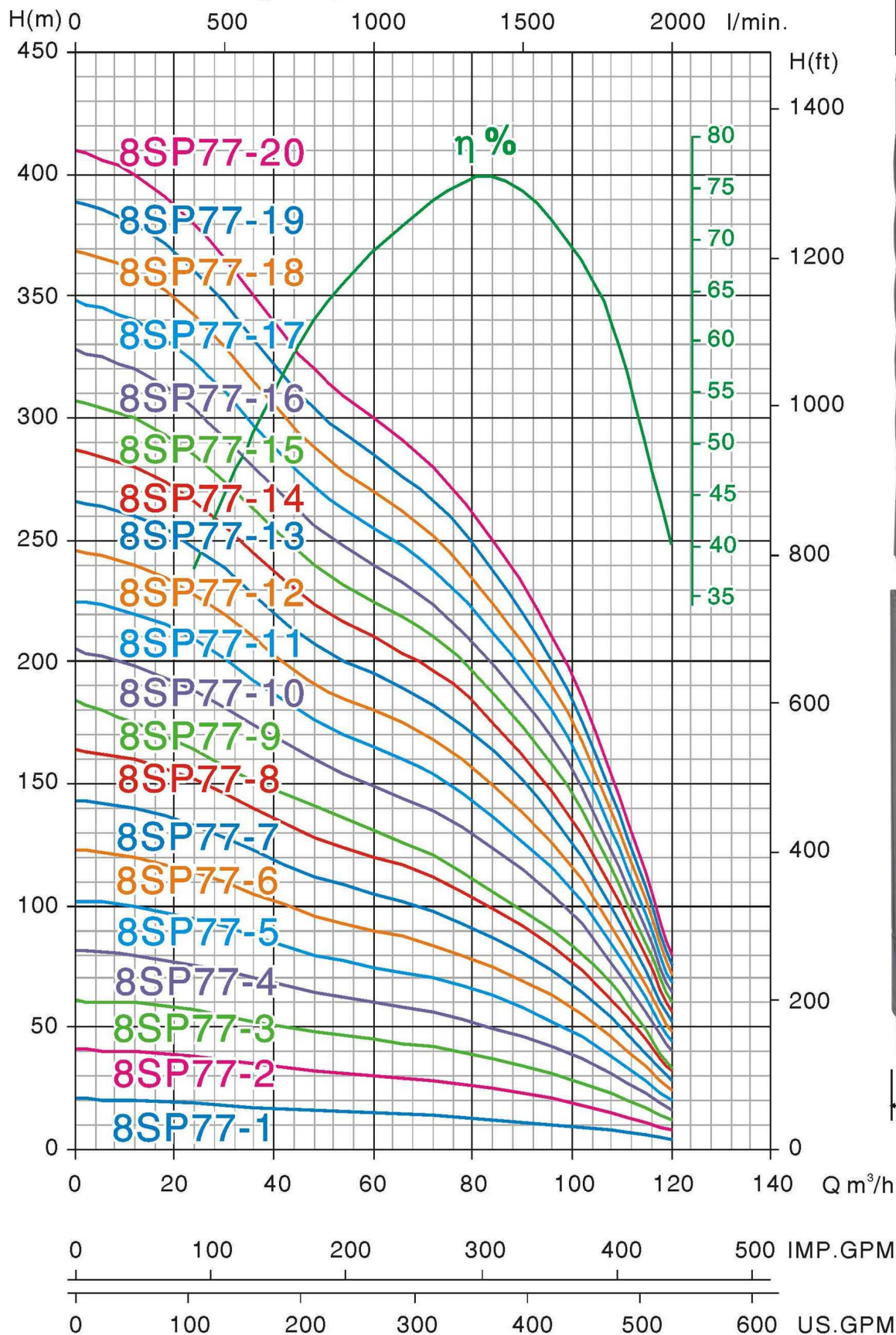
Part	Material
Shaft	AISI304
Check valve	AISI304
Coupling	AISI304
Pump body	AISI304
Impeller	AISI304
Diffuser	AISI304
Bearing	Wear resistant rubber
Suction strainer	AISI304
Suction support	AISI304
Delivery body	AISI304

Type	A	B	C	D	E	$\phi \text{ Max}$
6SP60-4	1505.2	783	722.2	3"G	144	145
6SP60-5	1648	813	835	3"G	144	145
6SP60-6	1785.8	838	947.8	3"G	144	145
6SP60-7	1928.6	868	1060.6	3"G	144	145
6SP60-8	2096.4	923	1173.4	3"G	144	145
6SP60-10	2372	973	1399	3"G	144	145
6SP60-12	2647.6	1023	1624.6	3"G	144	145
6SP60-14	2918.2	1068	1850.2	3"G	144	145
6SP60-16	3198.8	1123	2075.8	3"G	144	145

Type	Motor Power		Three phase 380V	Q	Capacity							
				m³/h	0	24	36	42	48	54	60	72
				l/min	0	400	600	700	800	900	1000	1200
(50Hz)	HP	kW	A	H m	Total head in meters							
6SP60-4	10	7.5	17		57	50	45	42	39	37	34	24
6SP60-5	12.5	9.2	21		71	64	59	56	53	49	45	31
6SP60-6	15	11	24		85	75	70	67	64	59	53	37
6SP60-7	17.5	13	28		99	88	81	78	74	69	62	43
6SP60-8	20	15	32		112	98	92	88	84	78	71	49
6SP60-10	25	18.5	40		141	125	115	110	105	98	89	61
6SP60-12	30	22	46		169	150	139	132	126	118	107	73
6SP60-14	35	26	54		197	175	160	152	145	137	125	85
6SP60-16	40	30	62		226	204	185	176	166	157	142	98

8SP77

Characteristic of functioning at 2850 rpm 50 Hz



8SP77

Type	Motor Power		Three phase 380V	Q	Capacity									
				m³/h	0	12	24	36	48	60	72	84	96	120
				l/min	0	200	400	600	800	1000	1200	1400	1600	2000
(50Hz)	HP	kW	A	H m	Total head in meters									
8SP77-1*	7.5	5.5	13.6		21	20	19	17.5	16	15	14	12	10.5	4
8SP77-2*	10	7.5	18		41	40	38	35	32	30	28	25	21	8
8SP77-3*	15	11	25.8		61	60	57	52.5	48	45	42	37	31.5	12
8SP77-4*	20	15	33.9		82	80	76	70	64	60	56	49	42	16
8SP77-5*	25	18.5	41.6		102	100	95	87.5	80	75	70	61.5	52.5	20
8SP77-6*	30	22	48.2		123	120	114	105	96	90	84	74	63	24
8SP77-7*	35	26	54.5		143	140	133	122.5	112	105	98	86	73.5	28
8SP77-8	40	30	65.4		164	160	152	140	128	120	112	98	84	32
8SP77-9	40	30	65.4		184	175	164	151	141	131	121	106	85	33
8SP77-10	50	37	79.7		205	198	188	174	160	149	139	123	105	40
8SP77-11	60	45	96.9		225	220	209	192.5	176	165	154	135	115.5	44
8SP77-12	60	45	96.9		246	240	228	210	182	180	168	148	126	48
8SP77-13	75	55	117		266	260	247	227.5	198	195	182	160	136.5	52
8SP77-14	75	55	117		287	280	266	245	224	210	196	172	147	56
8SP77-15	75	55	117		307	300	285	262.5	240	225	210	185	158.5	60
8SP77-16	85	63	132		328	320	304	280	256	240	224	197	169	64
8SP77-17	85	63	132		348	340	323	297.5	272	255	238	209	179.5	68
8SP77-18	100	75	155		369	360	342	315	288	270	252	221	190	72
8SP77-19	100	75	155		389	380	361	332.5	304	285	266	234	200.5	76
8SP77-20	100	75	155		410	400	380	350	320	300	280	246	211	80

PUMP MATERIALS

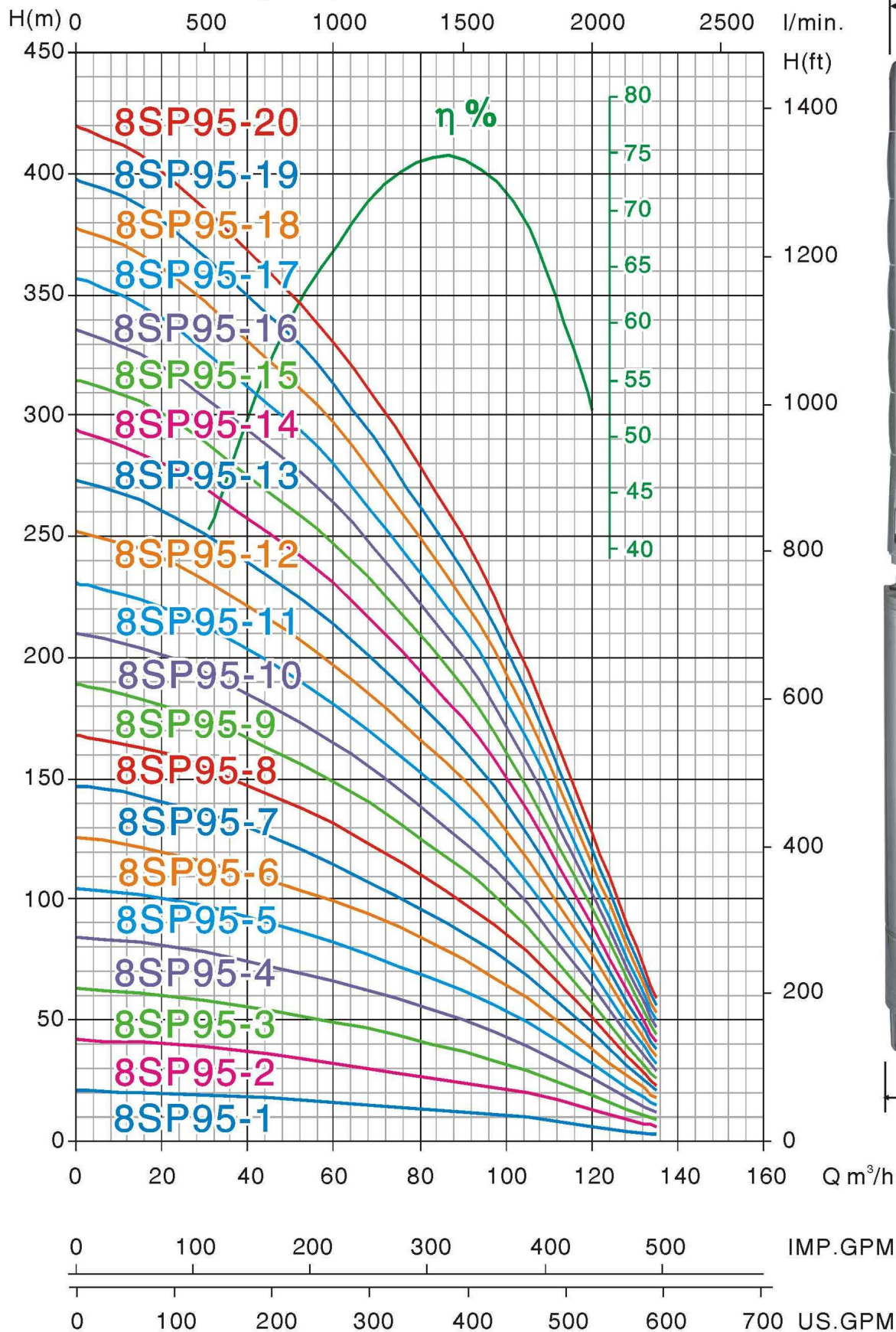
Part	Material
Shaft	AISI304
Check valve	AISI304
Coupling	AISI304
Pump body	AISI304
Impeller	AISI304
Diffuser	AISI304
Bearing	Wear resistant rubber
Suction strainer	AISI304
Suction support	AISI304
Delivery body	AISI304

Type	A	B	C	D	E	φ Max
8SP77-1*	1152	748	404	4"G	191	200
8SP77-2*	1291	783	508	4"G	191	200
8SP77-3*	1450	838	612	4"G	191	200
8SP77-4*	1639	923	716	4"G	191	200
8SP77-5*	1793	973	820	4"G	191	200
8SP77-6*	1947	1023	924	4"G	191	200
8SP77-7*	2096	1068	1028	4"G	191	200
8SP77-8	2306.4	1174.4	1132	4"G	191	200
8SP77-9	2410.4	1174.4	1236	4"G	191	200
8SP77-10	2559.4	1219.4	1340	4"G	191	200
8SP77-11	2718.4	1274.4	1444	4"G	191	200
8SP77-12	2822.4	1274.4	1548	4"G	191	200
8SP77-13	3061.4	1409.4	1652	4"G	191	200
8SP77-14	3165.4	1409.4	1756	4"G	191	200
8SP77-15	3269.4	1409.4	1860	4"G	191	200
8SP77-16	3433.4	1469.4	1964	4"G	191	200
8SP77-17	3537.4	1469.4	2068	4"G	191	200
8SP77-18	3711.4	1539.4	2172	4"G	191	200
8SP77-19	3815.4	1539.4	2276	4"G	191	200
8SP77-20	3919.4	1539.4	2380	4"G	191	200

• Items marked with * are equipped with 6" motor.

8SP95

Characteristic of functioning at 2850 rpm 50 Hz



8SP95

Type	Motor Power		Three phase 380V	Q	Capacity									
				m³/h	0	15	30	45	60	75	90	105	120	135
				l/min	0	250	500	750	1000	1250	1500	1750	2000	2250
(50Hz)	HP	kW	A	H m	Total head in meters									
8SP95-1 *	7.5	5.5	13.6		21	20	19	18	16	14	12.5	10	6	3
8SP95-2 *	12.5	9.2	21.7		42	41	39	36	33	28	25	20	13	6
8SP95-3 *	17.5	13	29.8		63	61	58	54	49	42	37.5	29	19	9
8SP95-4 *	25	18.5	41.6		84	82	78	72	66	56	50	39	26	12
8SP95-5 *	30	22	48.2		105	102	97	90	82	70	62.5	49	32	15
8SP95-6 *	35	26	54.5		126	122	116	108	99	84	75	59	38	18
8SP95-7	40	30	65.4		147	143	136	126	115	98	87.5	68	45	21
8SP95-8	50	37	79.7		168	163	155	142	132	114	100	78	51	23
8SP95-9	50	37	79.7		189	183	174	160	149	121	112.5	88	57	26
8SP95-10	60	45	96.9		210	204	194	178	165	139	125	98	64	29
8SP95-11	60	45	96.9		231	224	213	196	181	154	137.5	107	70	32
8SP95-12	75	55	117		252	245	232	214	198	168	150	117	77	35
8SP95-13	75	55	117		273	265	251	232	214	182	162.5	127	83	38
8SP95-14	85	63	132		294	285	270	250	231	196	175	137	89	41
8SP95-15	85	63	132		315	306	289	268	247	210	187.5	146	96	44
8SP95-16	100	75	155		336	326	308	286	264	224	200	156	102	47
8SP95-17	100	75	155		357	346	327	304	280	238	212.5	166	108	50
8SP95-18	125	93	185		378	367	346	322	297	252	225	176	115	53
8SP95-19	125	93	185		398	387	365	340	313	266	237.5	185	121	56
8SP95-20	125	93	185		420	408	384	358	330	280	250	195	128	59

PUMP MATERIALS

Part	Material
Shaft	AISI304
Check valve	AISI304
Coupling	AISI304
Pump body	AISI304
Impeller	AISI304
Diffuser	AISI304
Bearing	Wear resistant rubber
Suction strainer	AISI304
Suction support	AISI304
Delivery body	AISI304

Type	A	B	C	D	E	φ Max
8SP95-1*	1162	748	414	4"G	191	200
8SP95-2*	1331	813	518	4"G	191	200
8SP95-3*	1490	868	622	4"G	191	200
8SP95-4*	1699	973	726	4"G	191	200
8SP95-5*	1853	1023	830	4"G	191	200
8SP95-6*	2002	1068	934	4"G	191	200
8SP95-7	2212.4	1174.4	1038	4"G	191	200
8SP95-8	2361.4	1219.4	1142	4"G	191	200
8SP95-9	2465.4	1219.4	1246	4"G	191	200
8SP95-10	2624.4	1274.4	1350	4"G	191	200
8SP95-11	2728.4	1274.4	1454	4"G	191	200
8SP95-12	2967.4	1409.4	1558	4"G	191	200
8SP95-13	3071.4	1409.4	1662	4"G	191	200
8SP95-14	3235.4	1469.4	1766	4"G	191	200
8SP95-15	3339.4	1469.4	1870	4"G	191	200
8SP95-16	3513.4	1539.4	1974	4"G	191	200
8SP95-17	3617.4	1539.4	2078	4"G	191	200
8SP95-18	3811.4	1629.4	2182	4"G	191	200
8SP95-19	3915.4	1629.4	2286	4"G	191	200
8SP95-20	4019.4	1629.4	2390	4"G	191	200

• Items marked with * are equipped with 6" motor.

■ Applications in the world

Agricultural Irrigation in Pakistan



Project Location: Pakistan

Project Background: Pakistan is a large agricultural country, 70% of the population engages in agriculture-related fields. Nowadays Pakistan uses diesel three-phase generator to irrigate. In this way, maintenance cost of system is high and it is noisy and it pollutes the environment seriously. Meanwhile it also has potential security risk because of the storage of diesel.

Solution: Adopting solar pumping irrigation system instead of traditional diesel generator. Our system has no maintenance and fully automatic running; it leads to automation and mechanization.

Economic Benefits: The system can generate electricity 14 600 kWh annually, in its 25 years lifetime, the system can save standard coal up to 137.2 tons, reduce emission of CO₂ 60.4 tons, SO₂ 2.75 tons, smoke 2.06 tons, lime ash 35.7 tons. Solar power replaces the traditional power, diesel power generation and other traditional irrigation model. Solar pumping system can develop agricultural low-carbon economy and upgrade agriculture and industry. Green and pollution-free solar pumping technologies can save energy and reduce greenhouse gas emission. Then government will save the cost of power grid construction, farmers do not pay the electricity bills, do not burn diesel, and do not need to maintain the solar system and it helps to enhance agricultural production efficiency and reduce the burden on farmers, so as to improve the local farmers' life.

Social Benefits: Turning to the current energy crisis in Pakistan, Musharraf, the former president of Pakistan, said: "Pakistan is facing energy crisis. We earnestly hope to look for the suitable way and partners to resolve the recent energy crisis." He also said: "Pakistan is a populous, large agricultural country. Developing modern agriculture, improving the efficiency of agricultural production are prerequisite and the strong guarantee of economic development."

Daily Water Supply Pumping System in Kampala Uganda



Project Location: Countryside of Kampala Uganda

Project Background: Uganda has abundant solar source where the sunshine time reaches 2957 hours per year and more than 8 hours per day averagely. Comparing to Solar energy, electrical energy has a big problem, the grid could cover few places, and the price of electrical gets higher. The price of diesel and oil reached the highest ever. In this situation, solar system will be government's first choice.

Solution: Solar water pumping system was adopted for the project solving the daily water supplying and agricultural irrigation.

Economic Benefit: New solar pumping technology is adopted to reduce the carbon emission and save energy, no diesel, no maintenance, no bill on power supply, and no burden on farmers, and livings as well as farming are improved. The government saves capital on the power grid construction. The system generates power of 27375 kWh every year. During 25 years lifetime of our system it will save coal 257.3 tons; and reduce carbon emission 113.2 tons, sulfur dioxide 5.1 tons, dust 3.9 tons and lime ash 66.9 tons.

Social Benefit: A "renewable energy committee" was built by the local government for promoting the solar power pump.

Contact Us

Company:	Fire Pump Singapore Pte Ltd
Web:	www.firepump.com.sg
Attn:	Mr. Saha
Email:	saha@firepump.com.sg
Mobile:	+65 9099 8565
Tel:	+65 6515 5123
Address:	8 Keng Chin Road #13-11, CYAN, South Tower, Singapore 258710