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SP

2008

Non-clogging self-priming sewage pump



Company Profile



Hangzhou Nanfang Special Pump Industry Co.,Ltd. is specialized in manufacture of stainless steel multistage pumps, integrating scientific research, production and marketing. Since its establishment ten years ago, the company has devoted considerable efforts to make innovation of technology and management, and has successfully developed various kinds of pumps which are applicable to industrial and mining enterprises, municipal water supply, farm irrigation, petrochemical engineering, domestic water and fire water supply of high buildings, industrial water treatment, water purification, pharmaceutical industry, boiler, air-conditioning system etc. The main performances of CDL series stainless steel multistage vertical pump, TD in-line circulation pump, SJ series stainless steel multistage deep-well submersible pump, CDLK, CDLKF immersion type multi-stage centrifugal pump, CHL/CHLK/CHLF series stainless steel multistage horizontal pumps and QY series stainless steel pump conveying mixed gas and liquid, ZS series stainless steel horizontal single-stage centrifugal pump, MS series light stainless steel horizontal single-stage centrifugal pump, have fully reached international advanced level.

Besides designing pumps with advanced tools such as three-dimensional CAD and CFD software, the company boasts a complete set of precision manufacturing and inspection equipment. With perfect quality control system, the company has passed ISO9001 Quality System Certification, ISO14001 Environment Management System Certificate, and obtained CE Marking also. The company sell products well not only at home, but also in foreign countries, Europe, America, Southeastern Asia etc, gaining popularity due to their excellent quality, good credit standing and considerate after-sales service.

The company has established a wide sales and service network which has representative offices and service centers. Offices and service centers are set in all large and medium-scale cities, aiming to providing timely and satisfactory service for customers.

Satisfying customers will be eternal pursuit of the company. Looking forward to the future, the company will further keep up its fine tradition and persist in its business principle of "quality first, credit first and clients first"to offer customers products of high quality and more considerate services.

Nanfang pump, an international brand worthy of your trust!

Content

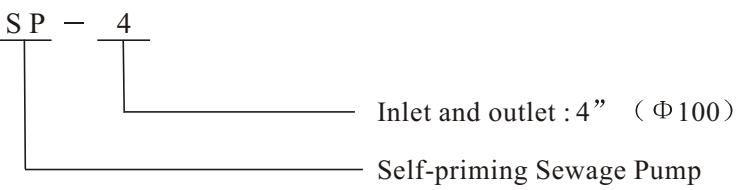
General Data

Definition of Model -----	3
Features -----	3
Application -----	3
Operating Limits -----	3
Section drawing -----	4
Material -----	4

Technical Data

SP-2 -----	5
SP-3 -----	7
SP-4 -----	9
SP-6 -----	11
Profile & Installation Dimension -----	13
Profile & Installation Dimension of Pump Unit With IMB3 Motor -----	14

● Definition of Model



● Features

SP Non-clogging self-priming sewage pump is our latest developed product, and is suitable for the treatment project of municipal sewage and industrial sewage as well as stage treatment and concentrated treatment system of various sewages. It's known as "King of Self-priming Sewage Pump", and it is the most ideal new-generation sewage product.

- Stable performance, reliable operation.
- Rapid self-priming, high suction head.
- Back-pull-out construction: Convenient for maintenance and troubleshooting. Daily maintenance can be performed rapidly by common tools, saving time and labor.
- Semi-open impeller structure and non-clogging design: Strong passing capacity. Diameter of maximum passing grain for SP-6 is 76mm.
- Convenient usage: The pump can be mounted near cesspit with only the suction pipe down in the liquid. (The pump shall be filled with water for first start).

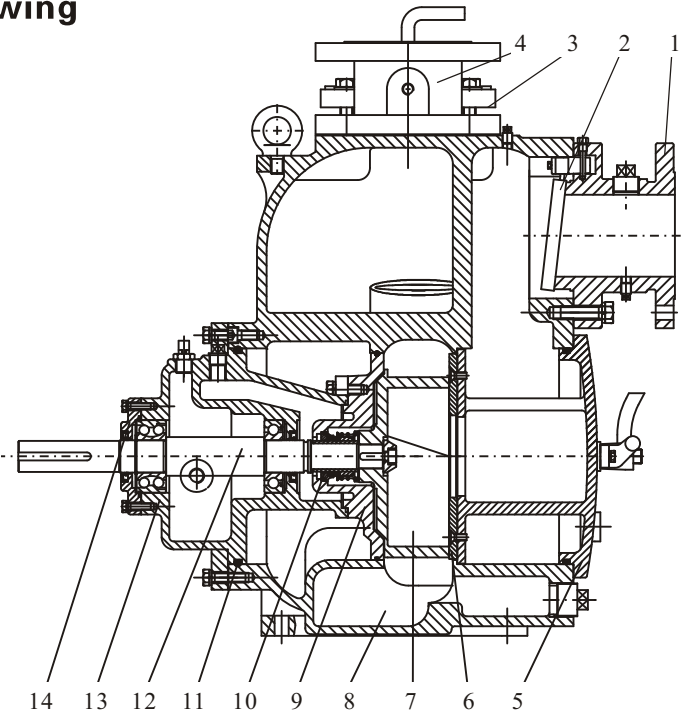
● Application

- Non-flammable and non-explosive liquid.
- Rain water and common sewage.
- Municipal drainage project, construction site, drainage station of people's air defense system.
- Industrial sewage of light industry, paper mill, textile, food processing plant, chemical industry, electric utility, mines, etc.
- Sewage discharge in the residential area.
- Sewage and deposit of water purifying system.
- Tanning industry, sewage of slaughter house, fish breeding in the river and pond.
- Wine and sugar industry.
- Discharge not strongly corrosive but seriously polluted sewage.

● Operating Limits

- Liquid temperature: 0℃~40℃, medium density $\leq 1.2 \times 10^3 \text{kg/m}^3$, pH5~9.
- Volume ratio of solids in the medium $\leq 2\%$.
- Diameter of maximum grain: SP-2 38mm, SP-3 63mm, SP-4/SP-6 76mm.
- Ambient temperature: $\leq 40^\circ\text{C}$.
- Altitude: Max. 1,000m.
- Max. Working pressure: see Performance Curve.
- Max. Suction head: see Performance Table.

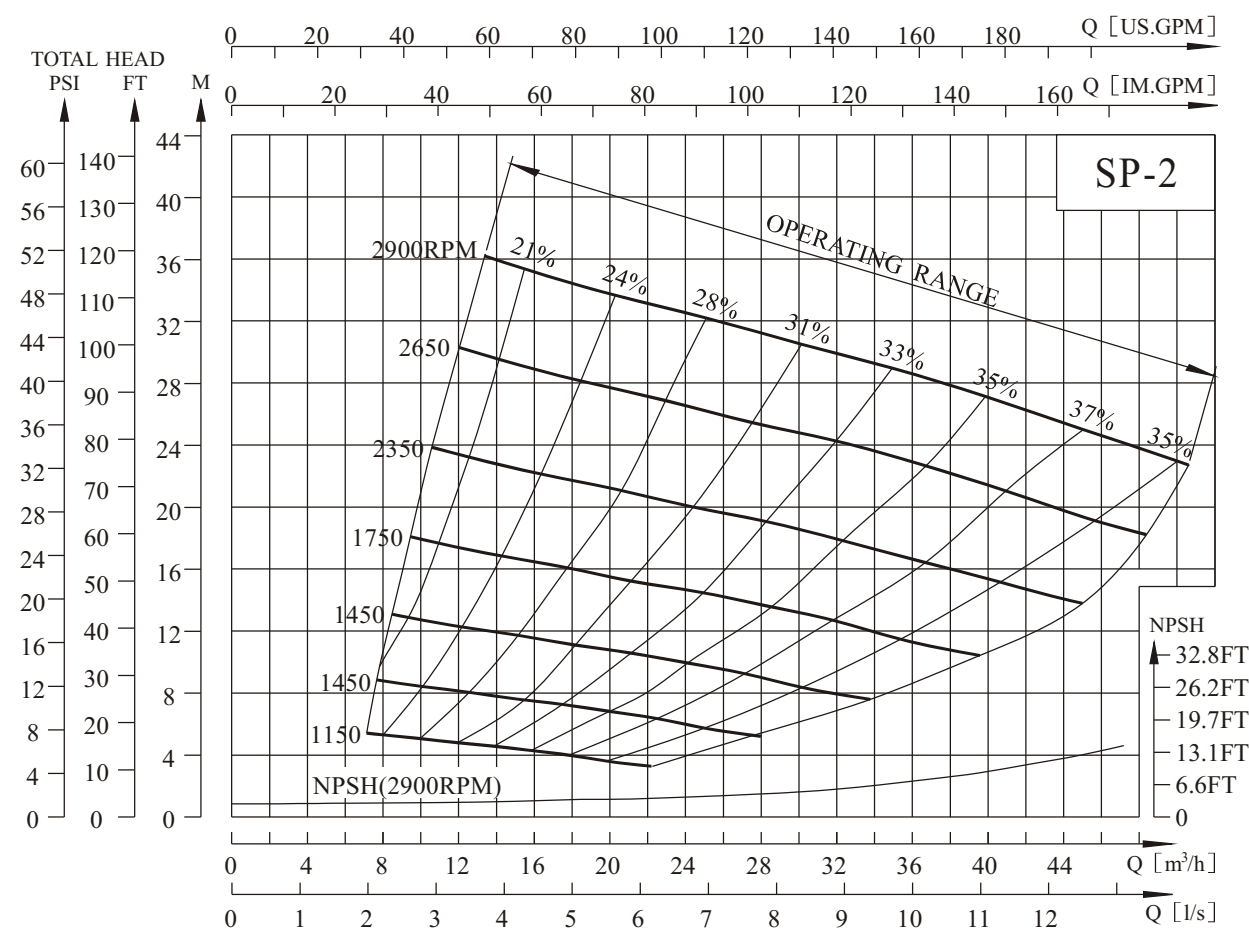
● Section drawing



● Material

NO.	Parts	Material	ANSI/ASTM
1	Suction Inlet	Cast iron	No.30
2	Flap Valve	NBR+ Carbon steel	NBR+A570Gr.A
3	Infusion Cover	Cast iron	No.30
4	Discharge Outlet	Cast iron	No.30
5	End Cover	Cast iron	No.30
6	Wear Plate	Carbon steel	1450
7	Impeller	DCI	60-40-18
		ZG304	CF-8
8	Volute	Cast iron	No.30
9	Seal Base	Cast iron	No.30
10	Cartridge Mechanical Seal	WC/ WC	WC/ WC
11	O-Ring	NBR/FPM	NBR/FPM
12	Shaft	Stainless steel	420
13	Bearing Body	Cast iron	No.30
14	Bearing Cover	Cast iron	No.30

● Performance curve



● SP-2 Performance Table

Model	RPM	Q		H (m)	Motor		Inlet & Outlet	Max.Solids (mm)	Suction Head (mm)
		(m³/h)	(l/s)		(kW)	(HP)			
SP-2	1150	15	4.2	4.0	0.75	1	50 (2')	38	5.5
	1450*	20	5.6	6.5	1.5	2			6.5
	1750	25	6.9	9.5	2.2	3			6.5
	2050	28	7.8	13.5	4	5.5			6.5
	2350	32	8.9	18.0	5.5	7.5			6.5
	2650	35	9.7	23.0	7.5	10			6.5
	2900*	40	11.1	27.0	9.2	12.5			6.5

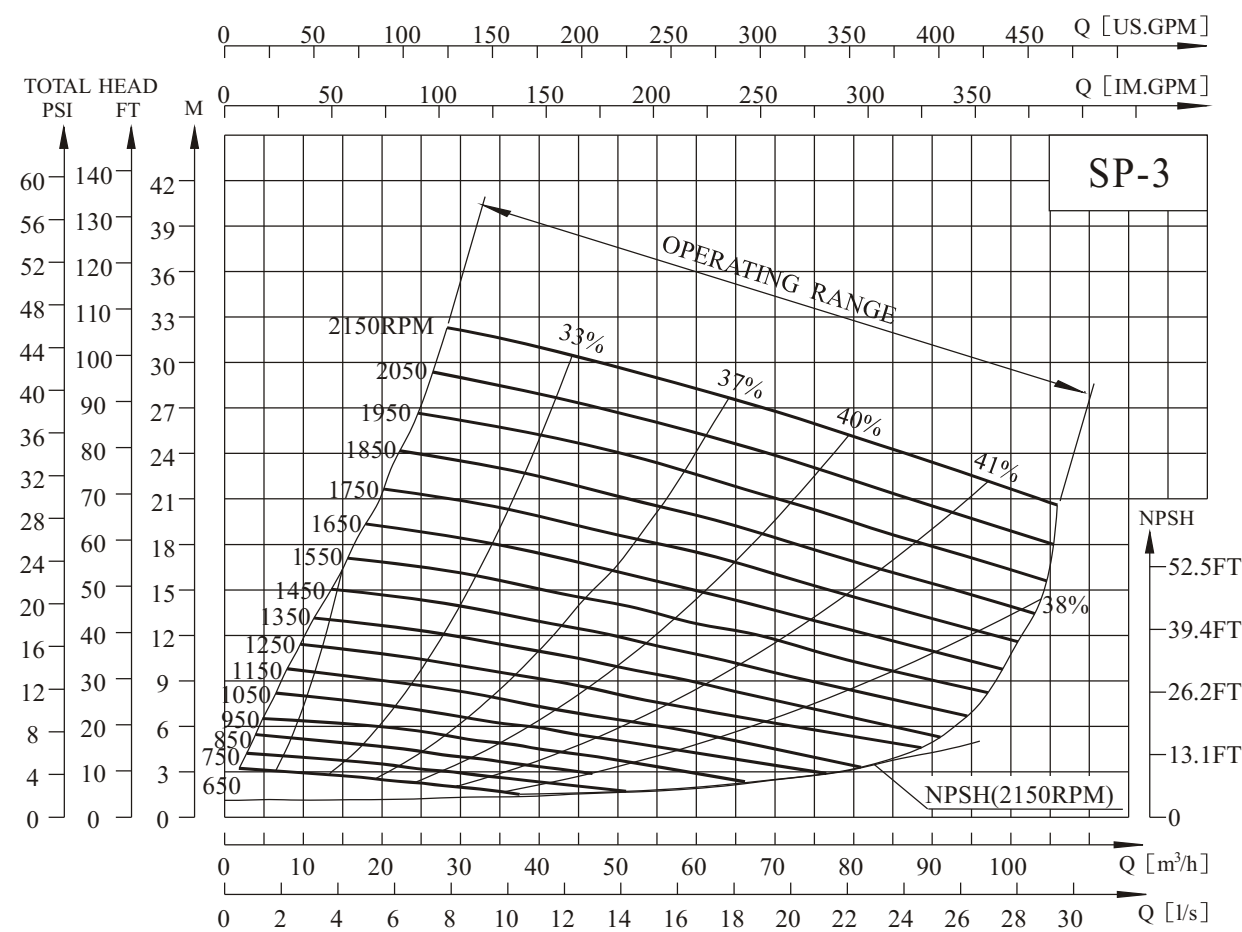
● SP-2 Operating Table

Model	RPM	Q (m³/h)	10	12.5	15	17.5	20	25	30	35	40	45
SP-2	1150	H (m)	5.1	4.7	4.0	3.8	3.5					
	1450*		8.4	8.1	7.6	7.3	6.5	5.8				
	1750		12.6	12.2	11.8	11.3	10.8	9.5	8.5			
	2050		17.9	17.2	16.7	16.1	15.5	14.5	13.2	11.6		
	2350			23.2	22.5	21.8	21.2	19.9	18.6	17.2	15.3	
	2650				30.1	29.2	28.4	27.6	26.2	24.8	23.0	21.6
	2900*					35.6	34.5	33.7	32.1	30.4	29	27.0

● Note: (Suit for SP-2、3、4、6)

- 1)The performance is based on pumping clean water under normal temperature. In case of increasing the intensity and specific gravity of the medium, the equipped power of the pump shall be increased properly.
- 2)For the parameter of rotational speed with “*” in the table, the pump can directly connect with Y2 and B3 series of standard motor through coupling. The installation diagram is shown in P13 of the catalogue.
- 3)As to the parameters of other rational speed in the table, the user can reach them by the following ways:
 - Transmission by Common Motor Sheave
 - Direct Transmission by Frequency Conversion Motor
 - Direct Transmission by Exterior Frequency Converter of Common Motor

● Performance curve



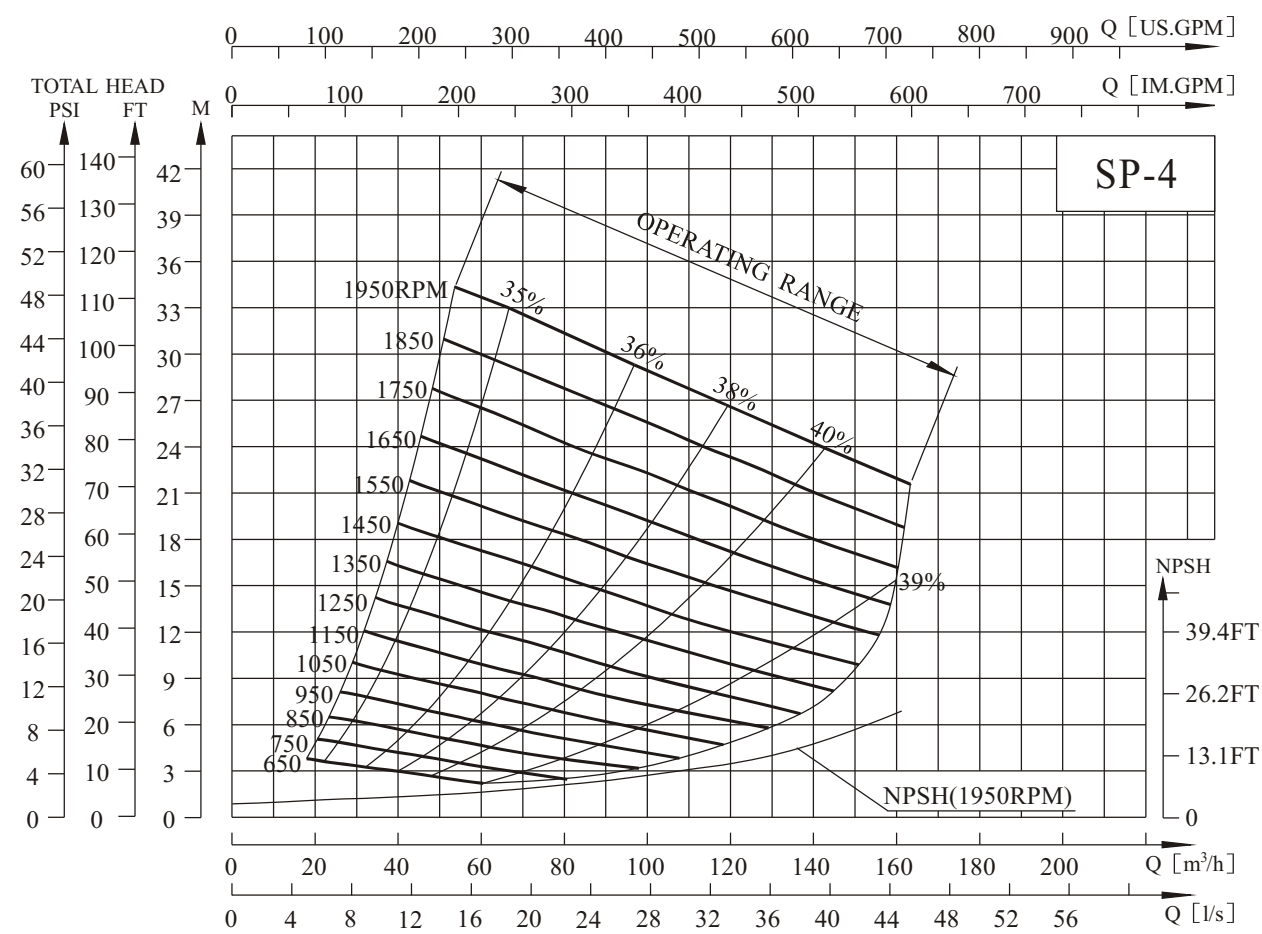
● SP-3 Performance Table

Model	RPM	Q		H	Motor		Inlet & Outlet	Max.Solids (mm)	Suction Head (mm)
		(m³/h)	(l/s)	(m)	(kW)	(HP)			
SP-3	650	25	6.9	2	0.75	1	80 (3')	63	1.5
	750*	30	8.3	3	1.5	2			1.8
	850	32.5	9.0	4	1.5	2			2.4
	950*	40	11.1	4.5	1.5	2			3.0
	1050	42.5	11.8	5.5	2.2	3			4.0
	1150	45	12.5	7	4	5.5			4.9
	1250	50	13.9	8	4	5.5			5.5
	1350	52.5	14.6	10	5.5	7.5			5.8
	1450*	55	15.3	11.5	5.5	7.5			6.4
	1550	60	16.7	12.5	7.5	10			6.4
	1650	65	18.1	14.5	11	15			6.7
	1750	70	19.4	16	11	15			6.7
	1850	72.5	20.1	18	15	20			7.6
	1950	75	20.8	20	15	20			7.6
	2050	80	22.2	22.5	15	20			7.6
	2150	85	23.6	24.5	18.5	25			7.6

● SP-3 Operating Table

Model	RPM	Q (m³/h)	10	20	30	40	50	60	70	80	90	100
SP-3	650	H (m)	2.9	2.5	2.0							
	750*		3.9	3.5	3.0	2.3						
	850		5.2	4.7	3.9	3.4						
	950*		6.4	6.0	5.2	4.5	3.8					
	1050		7.9	7.4	6.7	5.9	5.0	4.3				
	1150		9.7	9.0	8.3	7.4	6.5	5.6				
	1250		11.3	10.7	10.0	9.1	8.0	7.1	6.2			
	1350			12.6	11.9	11.0	10.0	9.0	7.7			
	1450*			14.7	14.0	12.9	12.0	10.8	9.6	8.3		
	1550			16.8	16.1	15.1	14.0	12.5	11.7	10.4	9.1	
	1650			19.3	18.5	17.4	16.2	15.0	13.6	12.3	11.1	
	1750				20.9	19.7	18.7	17.5	16.0	14.5	13.2	11.8
	1850				23.5	22.5	21.2	20.0	18.4	16.9	15.3	14.0
	1950				26.2	25.3	24.1	22.7	21.0	19.6	17.9	16.4
	2050				29.0	28.0	26.8	25.3	24.0	22.5	20.5	18.9
	2150				32.1	31.0	29.7	28.2	26.8	25.1	23.4	21.7

● Performance curve



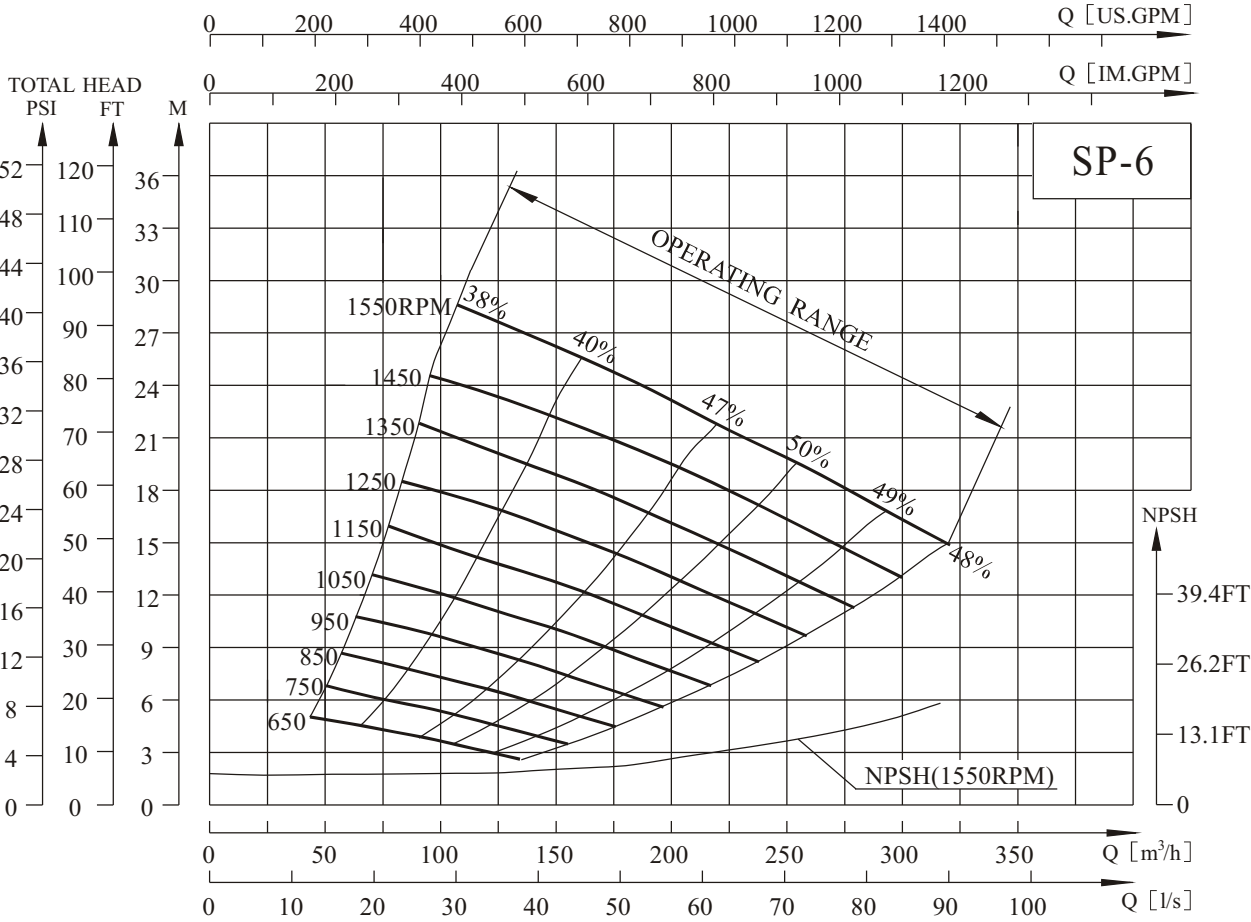
● SP-4 Performance Table

Model	RPM	Q		H (m)	Motor		Inlet & Outlet	Max.Solids (mm)	Suction Head (mm)
		(m³/h)	(l/s)		(kW)	(HP)			
SP-4	650	40	11.1	3	1.5	2	100 (4')	76	1.5
	750*	45	12.5	4	1.5	2			2.4
	850	53	14.7	5	2.2	3			4.9
	950*	60	16.7	6	3	4			5.8
	1050	65	18.1	7.5	4	5.5			6.7
	1150	72	20.0	9	5.5	7.5			7.3
	1250	80	22.2	10.5	7.5	10			7.6
	1350	85	23.6	12.5	11	15			7.6
	1450*	100	27.8	13.5	11	15			7.6
	1550	110	30.6	15.5	15	20			7.6
	1650	115	31.9	18	15	20			7.6
	1750	120	33.3	20	18.5	25			7.6
	1850	130	36.1	22.5	22	30			7.6
	1950	135	37.5	25	30	40			7.6

● SP-4 Operating Table

Model	RPM	Q (m³/h)	20	32	48	64	80	96	112	128	144	160
SP-4	650	H (m)	3.8	3.3	2.6							
	750*			4.5	3.7	3.0						
	850			6.0	5.3	4.5	3.5					
	950*			7.5	6.5	5.7	5.0					
	1050			9.7	8.7	7.8	6.8	5.9				
	1150			11.9	10.8	9.9	8.8	7.6				
	1250			14.2	13.2	12.0	10.8	9.5	8.4			
	1350			16.7	15.7	14.3	13.1	11.8	10.5			
	1450*				18.0	16.5	15.5	14.0	12.5	11.5		
	1550				20.9	19.8	18.3	16.9	15.4	13.8	12.6	
	1650				24.3	22.9	21.1	19.8	18.1	16.3	15.0	
	1750				27.6	26.2	24.4	22.9	21.3	19.3	17.5	16.2
	1850				31.0	29.8	27.7	26.1	24.4	22.5	20.5	18.7
	1950				34.5	33.4	31.5	29.4	27.7	25.7	23.5	21.7

● Performance curve



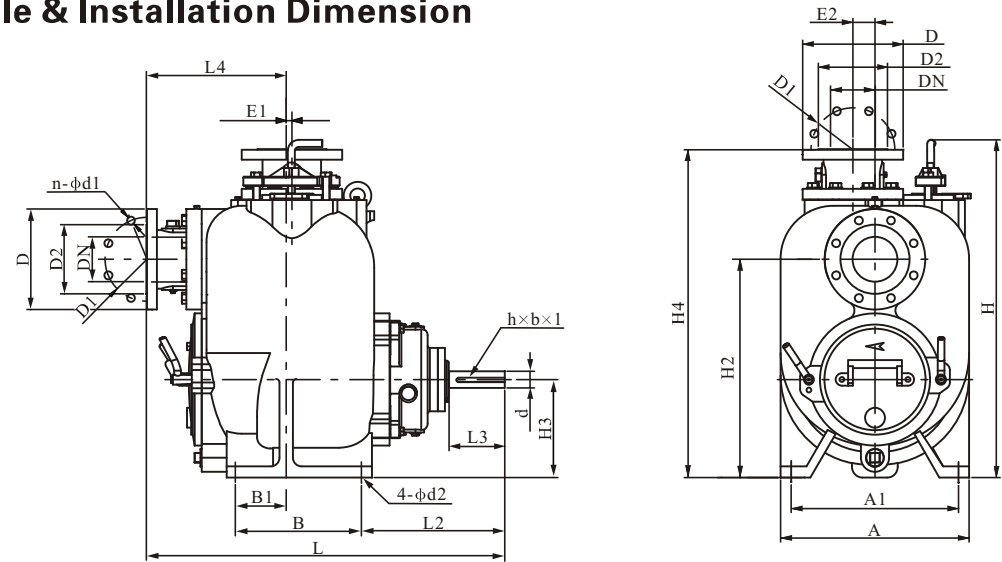
● SP-6 Performance Table

Model	RPM	Q		H (m)	Motor		Inlet & Outlet	Max.Solids (mm)	Suction Head (mm)
		(m³/h)	(l/s)		(kW)	(HP)			
SP-6	650	100	27.8	3.5	2.2	3	150 (6')	76	2.4
	750*	125	34.7	4.5	4	5.5			2.7
	850	150	41.7	5.5	5.5	7.5			3.6
	950*	160	44.4	7.5	7.5	10			4.2
	1050	180	50.0	9.0	11	15			5.5
	1150	200	55.6	10.0	15	20			6.4
	1250	220	61.1	12.5	18.5	25			6.4
	1350	230	63.9	15.0	22	30			6.7
	1450*	250	69.4	17.0	30	40			7.0
	1550	280	77.8	18.0	30	40			7.6

● SP-6 Operating Table

Model	RPM	Q (m³/h)	50	80	120	150	180	210	240	270	300
SP-6	650	H (m)	5.0	4.2	3.1						
	750*			6.0	4.7	3.6					
	850			8.0	7.0	5.5					
	950*			11.0	9.5	7.5	6.8				
	1050			13.0	11.0	10.0	9.0	7.5			
	1150			16.0	14.0	12.8	11.2	10.0	8.0		
	1250				17.0	15.5	14.0	12.7	10.5		
	1350				20.5	19.0	17.5	15.5	14.0	12.0	
	1450*				24.0	22.0	21.0	19.0	17.0	15.0	13.0
	1550				28.0	26.0	24.5	22.7	20.5	18.5	16.5

● Profile & Installation Dimension



Item		SP-2	SP-3	SP-4	SP-6
Dimension of Inlet & Outlet Flange	PN	DIN(mm)	PN0.6MPa		PN1.0MPa
		ANSI	Class150		Class150
	DN	DIN(mm)	50	80	100
		ANSI	2"	3"	4"
	D	DIN(mm)	140	190	220
		ANSI	6"	7.5"	9"
	D1	DIN(mm)	110	150	180
		ANSI	4.75"	6"	7.5"
	D2	DIN(mm)	90	128	158
		ANSI	3.6"	5"	6.2"
Installation Dimension	n- φ d1	DIN(mm)	4- φ 14	4- φ 19	8- φ 19
		ANSI	4- φ 3/4"	4- φ 3/4"	8- φ 3/4"
	H2(mm)	318	431.8	495.3	574.3
	A(mm)	308	377	428	580
	A1(mm)	281	328	373	527
	B(mm)	163.2	228.6	279.4	279.4
	B1(mm)	54	76.2	110	77.8
	L2(mm)	274.8	285	326	294
	d2(mm)	φ 14	φ 18	φ 18	φ 18
	H3(mm)	151.5	190.5	222.2	257.2
Profile Dimension	L3(mm)	104	102	127	127
	d	DIN(mm)	φ 38		φ 38
		ANSI	φ 1.5"		φ 1.5"
	h×b×1	DIN(mm)	10×5×95	10×5×80	10×5×90
		ANSI	.38" ×.19" ×3.74"	.38" ×.19" ×3"	.38" ×.19" ×3.5"
	H(mm)	552	697.5	760	875
	H4(mm)	502	652	735	887.7
	L(mm)	615	712.2	813.5	906.6
	L4(mm)	233	277	318	411
	E1(mm)	27.5	15	13	0
Wt. (kg/lbs)		99/218	190/419	275/606	438/966

● Profile & Installation Dimension of Pump Unit With IMB3 Motor

