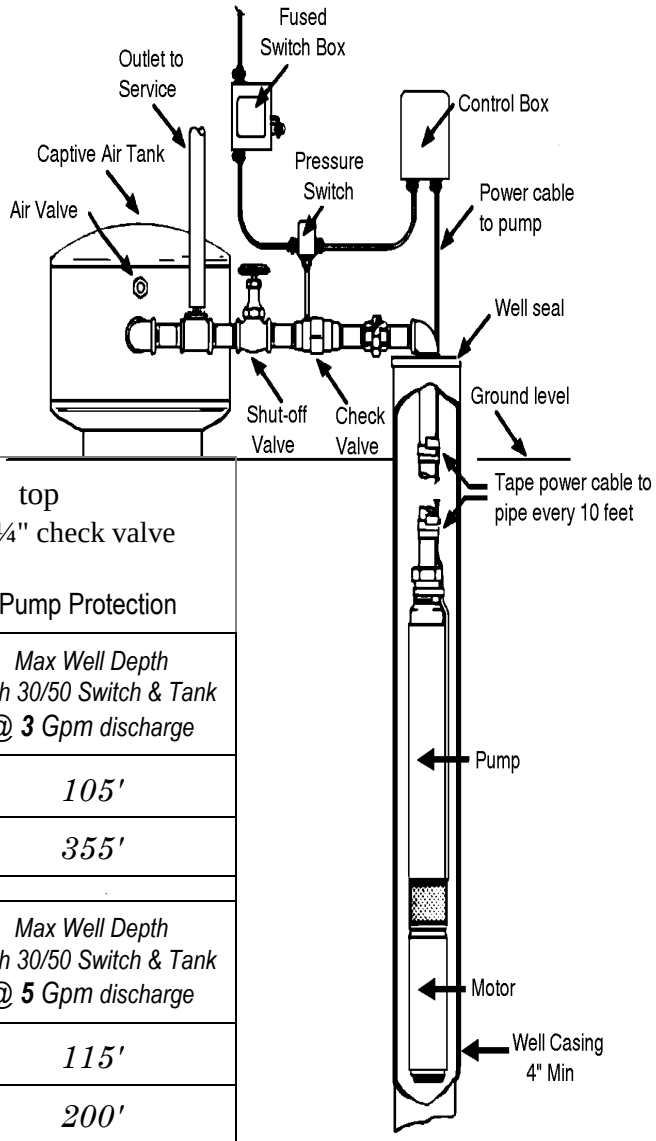
Schaefer PUMPS (JACUZZI)

Conversion Factors

1 Foot of Head = .433 psi

1 psi = 2.31 Feet of Head

50 psi = 115 Feet of Head



"SandHandler" Submersible Pumps

4" Submersible Pump with 1¼"fip Stainless Steel top
3-Wire with ground 230 volt • **12 Month Warranty** • 1¼" check valve included
*Price Includes Control Box • * Add Optional Pumptec™ for Ultimate Pump Protection

SandHandler 4" Submersible Pumps			Total head @ 5 Gpm discharge	Max Well Depth With 30/50 Switch & Tank @ 3 Gpm discharge
5S4513XV-S2	$ 796.00	½ HP	180' of Head	105'
7S4518XV-S2	1,094.00	¾ HP	370' of Head	355'

SandHandler 4" Submersible Pumps			Total head @ 7 Gpm discharge	Max Well Depth With 30/50 Switch & Tank @ 5 Gpm discharge
5S479XV-S2	$ 735.00	½ HP	210' of Head	115'
7S4712XV-S2	949.00	¾ HP	280' of Head	200'
1S4715XV-S2	1,080.00	1 HP	340' of Head	305'

SandHandler 4" Submersible Pumps			Total head @ 10 Gpm discharge	Max Well Depth With 30/50 Switch & Tank @ 10 Gpm discharge
5S4108XV-S2	$ 665.00	½ HP	160' of Head	45'
7S41011XV-S2	876.00	¾ HP	220' of Head	105'
1S41014XV-S2	993.00	1 HP	280' of Head	165'
15S41019XM-S2	1,390.00	1½ HP	400' of Head	285'

1 Gal of fresh water = 8.33 lb. 1 Cubic Foot of water = 7.48 Gal
Gallons held in 100' of pipe = 4.08 x {Diameter(inches) of pipe}^{2}
Weight of water in 100' of pipe = 34.0 x {Diameter(inches) of pipe}^{2}

Control Boxes

½ HP	$ 75.00
¾ HP	82.00
1 HP	89.00
1½ HP	115.00

Franklin Pumptec Pump Protector

⅓-1½ HP	$ 212.00

•Protect Against Dry Well
•Rapid Cycling
•High or Low Voltage

FACTS ABOUT WATER

1 Gal of fresh water = 8.333 lb.
1 cubic foot of water = 7.48 Gal

Water expands 4.34% when heated from 40ºF to 212ºF.

A 40 gal water heater will gain an extra ⅔ gal of water volume when heating water from 55ºF to 120ºF. If a house has a check valve on the incoming cold water line, a small expansion tank might be needed to prevent the P&T valve from continuously opening.

1 Foot of Head = .433 #/sq.ft
2.31 Feet of Head = 1 #/sq.ft
115.5 Feet of Head = 50 #/sq.ft

The **Static-Head** of a water system equals the height difference between a water tank (or a water pump) and the faucet in the house.
The **Dynamic-Head** of a water system equals the **Static-Head** minus the **Friction-Loss** in the piping, fittings, and valves.
A 1000' run of 1" PVC pipe from a water tank 100' higher than the house will have a **Static-Head** of 43psi. The **Dynamic-Head** will be less than 29psi @ 10gpm.

Maximum Motor Cable Length

Wire Size / Feet

*115V & 230V HP	#14	#12	#10	#8	#6	#4
*⅓	130′	210′	340′	540′	840′	1300′
*½	100′	160′	250′	390′	620′	960′
⅓	550′	880′	1390′	2190′	3400′	5250′
½	400′	650′	1020′	1610′	2510′	3880′
¾	300′	480′	760′	1200′	1870′	2890′
1	250′	400′	630′	990′	1540′	2380′
1½	190′	310′	480′	770′	1200′	1870′
2	150′	250′	390′	620′	970′	1530′
3	120′	190′	300′	470′	750′	1190′
5		↳	180′	280′	450′	710′

1 **HP** = 745.7 **Watts** 1 **kW** = 1.341 **HP**
I(Current Draw) = **HP x** (745.7 Watts) / **V**(Volts)

Water Line Storage Capacities

Gallons per 100' = D^2(Pipe Diameter Inches) **x 4.085**

e.g. 100' of 1" water line holds 4.085gal of water.

Friction Loss per 100' of PVC Pipe

Pounds / Sq. Inch

GPM	½″	¾″	1″	1¼″	1½″	2″
1	.43	.12				
2	.86	.24	.13	.04	.01	
5	4.87	1.36	.39	.12	.06	.02
7	8.95	2.49	.72	.21	.10	.04
10	17.03	4.74	1.37	.40	.20	.07
15	↳	10.06	2.90	.85	.43	.14
20		17.13	4.94	1.45	.74	.25
25		↳	7.45	2.18	1.12	.37
30			10.46	3.06	1.57	.52
35			13.91	4.07	2.09	.70
40			↳	5.22	2.68	.89
45	*Use Next Pipe Size*			6.49	3.33	1.11
50				7.88	4.04	1.35
60				↳	5.67	1.89
80					9.68	3.22
100					14.61	4.87

Friction Loss per 100' of Poly Pipe

Pounds / Sq. Inch

½″	¾″	1″	1¼″	1½″	2″	GPM
.56	.15					1
1.84	.48	.15	.04			2
9.04	2.38	.76	.21	.10		5
13.00	3.70	1.20	.32	.18	.05	7
30.95	8.08	2.56	.69	.33	.10	10
↳	16.58	5.25	1.42	.68	.21	15
	↳	8.69	2.36	1.13	.34	20
		12.92	3.50	1.67	.51	25
		↳	4.82	2.31	.70	30
			6.36	3.03	.92	35
			8.08	3.84	1.17	40
Use Next Pipe Size			10.02	4.76	1.44	45
			↳	5.76	1.73	50
				7.97	2.42	60
				↳	4.02	80
					6.00	100