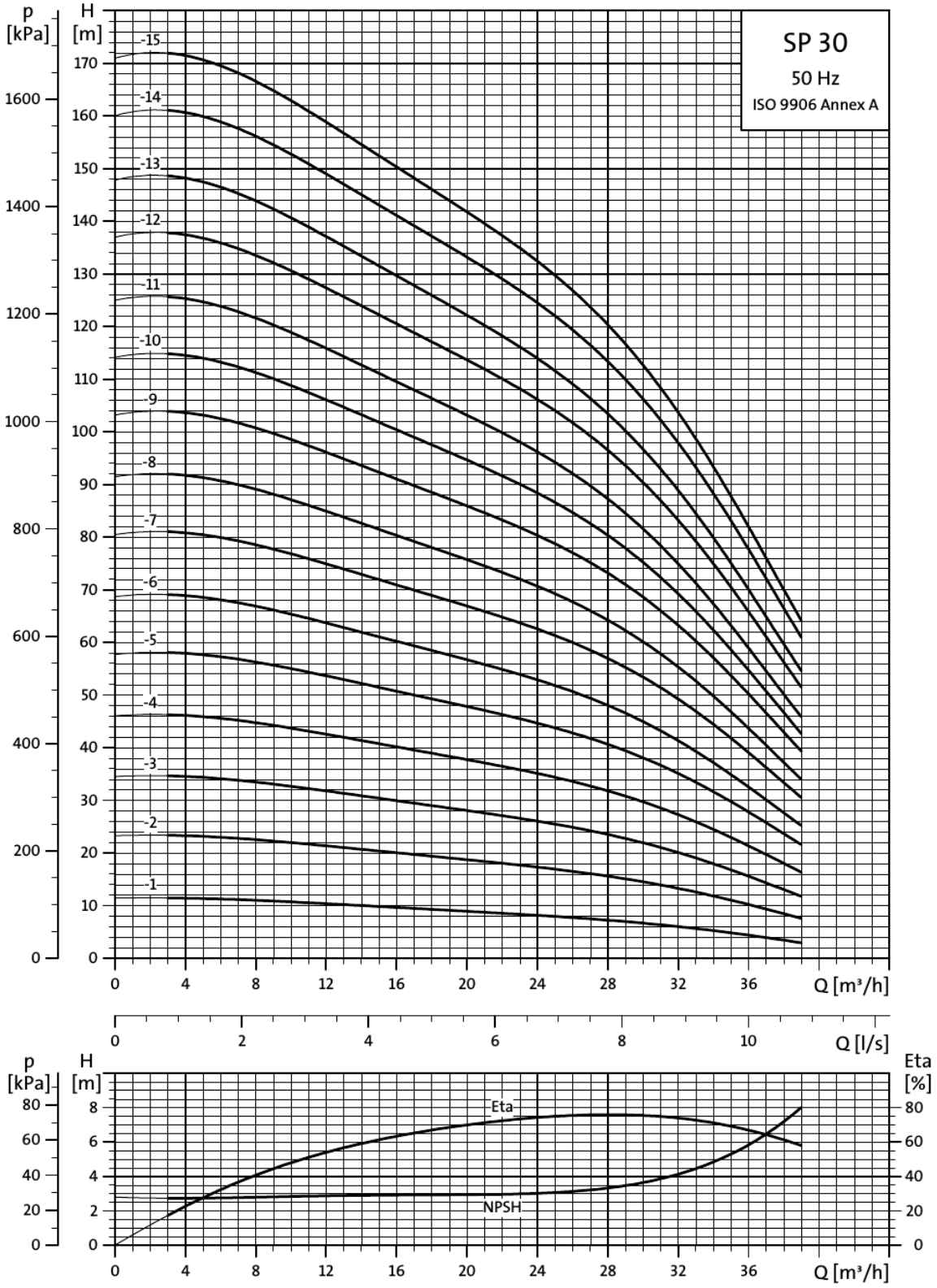
Submersible pumps general information

S.#	Product Description	Quantity	Unit Price	Amount
	Submersible Pump & Motor			
1	***Motor Details***			
	BRAND: Impo (FRANKLIN GROUP USA)			
	Produced in Turkey			
	KW : 15			
	HP : 20			
	EN ISOS 9906 Certified			
	Body : Stainless Steel			
	Volt : 380-415			
	HZ : 50			
	Phase : 3			
	RPM : 2863			
	Outer Dia : 6"			
	Rewindable & Water Lubricate			
	Class B insulation			
	IP68 Protection Class			
	(Mechanical seal ,Carbon/Ceramic),			
	Squirrel Cage Asynchronous Motors.			
2	**Pump Details**			
	BRAND: Impo (FRANKLIN GROUP USA)			
	Produced in Turkey			
	Model : S6 SS 30 / 20			
	HP: 20			
	KW: 15			
	Discharge 3"			
	EN ISOS 9906 Certified			
	COMPLETE STAINLESS STEEL AISI 304 (SPECIAL VERSION)	1	510,109	510,109
	Pump Performance Curve			
	Total Amount Of Set	**Net Total**		510,109

m^3/h	0	16	18	20	22	30	38
G.P.M. :	0.0	59.2	66.6	74.0	81.4	111.0	140.6
Head In Meter	191	188	184	180	172	140	90
Head In Feet	626.48	616.64	603.52	590.4	564.16	459.2	295.2

SP 30


SP 30
50 Hz
ISO 9906 Annex A
p [kPa]
H [m]
-15
-14
-13
-12
-11
-10
-9
-8
-7
-6
-5
-4
-3
-2
-1
Q [m³/h]
Q [l/s]
Eta [%]
Eta
NPSH

Model : T-SP-19-T-6-2.5-11A-15-11250

Zaraah pumps

T : Tawanai
SP : Submersible Pump
19 : Cubic meters per hour capacity
T : Single Phase 220V- 240V / 50HZ or T for Three Phase 380V - 415V / 50HZ
6 : Pump Diameter 6 inches
2.5 : Discharge size 2.5 inches.
11A : Motor Power in 11 KW model
15 : Motor Power in HP
11250 : Watts

Max depth (TDH, Head) = 984 feet, 300 meters

m^3/h	0.0	10	12	14	16	17	19
G.P.M. :	0.0	37.0	44.4	51.8	59.2	62.9	70.3
Head In Meter	300	245	224	212	192	182	157
Head In Feet	984	803.6	734.72	695.36	629.76	596.96	514.96

Performance Graph : S6 SP15
Rs. 725,036

Warranty : 6 Months

Motor Details
Brand : Impo (Made In Turkey) (Stainless Steel)
KW: 11 , HP : 15 , Phase: 3 , HZ: 50 , Outer Dia: 6" , RPM: 2863, Volt : 380
EN ISOS 9906 Certified
Brand New
Rewindable & Water Lubricate
Maximum Water Temperature : 30
Pump Details
Brand : Impo (Made In Turkey) (Stainless Steel)
Model : S6 SS 15 / 25
Discharge 2.5"
EN ISOS 9906 Certified
Brand New
Stainless Steel Diffusers,Impellers & Casing

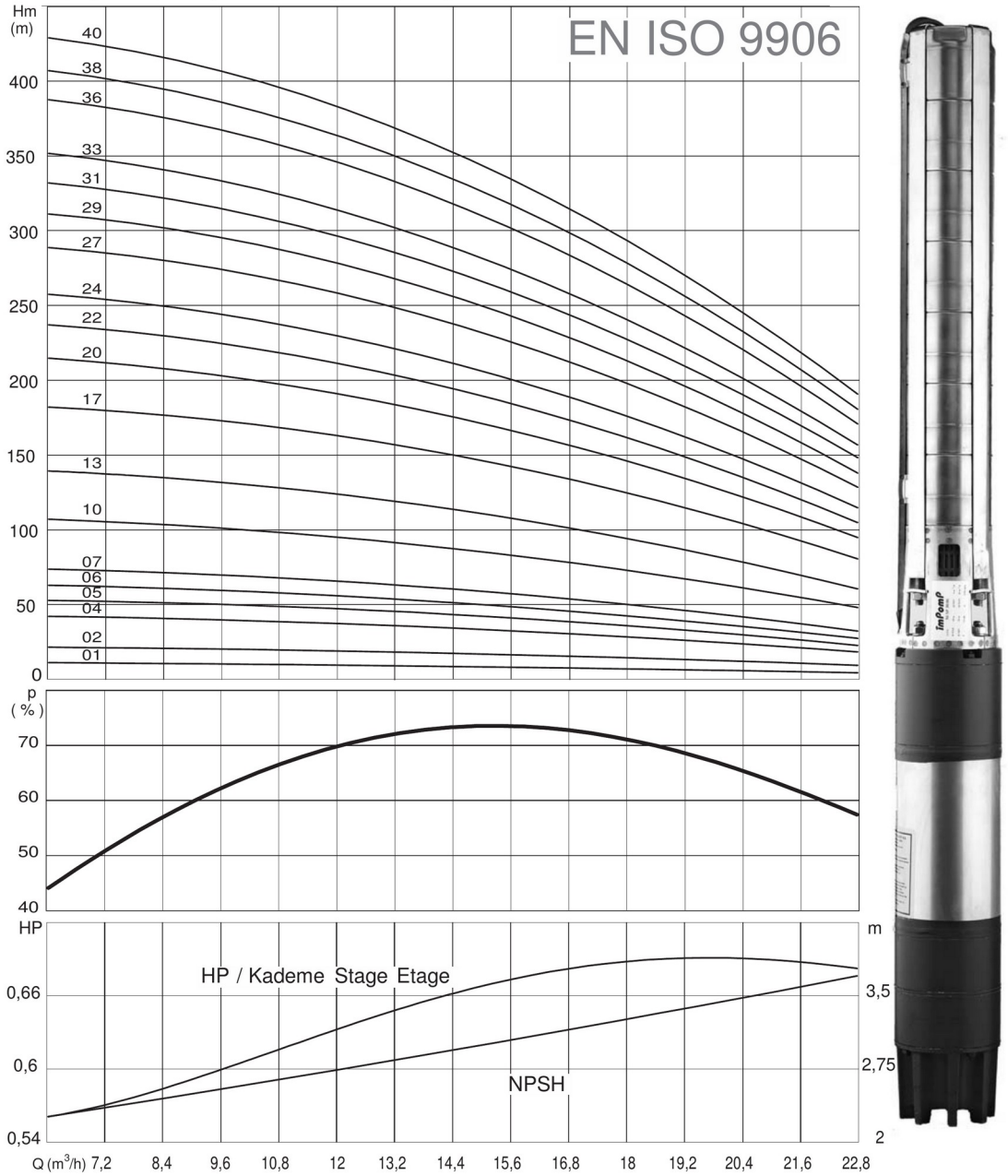
S6 SP15

50 Hz

DALGIÇ MOTOR DALGIÇ POMPA
SUBMERSIBLE MOTOR & PUMP
MOTEUR & POMPE IMMERGE

Dönüş Hızı Rotation Speed Vitesse de Rotation 2900 RPM / Tours/min	**Dönüş Yönü / Rotation** Saatin Tersi Yönünde Counterclockwise Sens Anti - Horaire	**Klepe Çıkışı / Outlet / Sortie** 2 1/2" İçten Pasolu 11 Diş 2 1/2" İnside Threaded 11 TPI 2 1/2" Fileté İnterrieur 11 TPI	**Mil Ucu / Shaft End / Fin d'Arbre** NEMA Standardına Uygun According to NEMA En Accord Norme NEMA	Mil Çapı Shaft Diameter Diamètre d'Arbre **20 mm**	

Q (l /mn)	140	160	180	200	220	240	260	280	300	320	340	360	380
Q (l /s)	2,3	2,7	3,0	3,3	3,7	4,0	4,3	4,7	5,0	5,3	5,7	6,0	6,3



S6 SP15 SERIES

TEKNİK RESİMLER VE TABLOLAR
TECHNICAL DRAWINGS AND CHARTS
SCHEMAS ET DIAGRAMMES TECHNIQUES

MALZEME LİSTESİ

PARÇA ADI	MALZEME
Mil	Paslanmaz çelik (AISI 420)
Emiş	Paslanmaz çelik (AISI 304)
Kaplin	Paslanmaz çelik (AISI 304)
Kaplin civatası	Paslanmaz çelik (AISI 304)
Orta burç	Kauçuklçelik
Difüzör	Paslanmaz çelik (AISI 304)
Aşınma bileziği	Kauçuklçelik
Fan	Paslanmaz çelik (AISI 304)
Konik kama	Paslanmaz çelik (AISI 304)
Konik kama somunu	Paslanmaz çelik (AISI 304)
Klepe 2.5" çıkışlı 11 diş	Paslanmaz çelik (AISI 304)
Klepe diski	Paslanmaz çelik (AISI 304)
Klepe yayı	Paslanmaz çelik (AISI 304)
Süzgeç	Paslanmaz çelik (AISI 304)
Kablo muhafaza sacı	Paslanmaz çelik (AISI 304)
Lama	Paslanmaz çelik (AISI 304)

MATERIALS DESCRIPTION EN

PART NAME	MATERIAL
Shaft	Stainless steel (AISI 420)
Support	Stainless steel (AISI 304)
Coupling	Stainless steel (AISI 304)
Coupling screw	Stainless steel (AISI 304)
Bearing	RubberISteel
Diffuser	Stainless steel (AISI 304)
Wear ring	RubberISteel
Impeller	Stainless steel (AISI 304)
Bushing	Stainless steel (AISI 304)
Nut	Stainless steel (AISI 304)
Valve body 2.5" 11 TPI	Stainless steel (AISI 304)
Valve	Stainless steel (AISI 304)
Valve spring	Stainless steel (AISI 304)
Strainer	Stainless steel (AISI 304)
Cable guard	Stainless steel (AISI 304)
Tie-bolt	Stainless steel (AISI 304)

DESCRIPTION MATERIAUX FR

NOM DE PIECE	MATERIEL
Arbre	Acier inox (AISI 420)
Support	Acier inox (AISI 304)
Accouplement	Acier inox (AISI 304)
Vis d'accouplement	Acier inox (AISI 304)
Coussinet	Caoutchouc I Acier
Diffuseur	Acier inox (AISI 304)
Bague d'usure	Caoutchouc I Acier
Roue	Acier inox (AISI 304)
Clavette	Acier inox (AISI 304)
Ecrou	Acier inox (AISI 304)
Corps du clapet 2,5" sortie 11 TPI	Acier inox (AISI 304)
Disque de clapet	Acier inox (AISI 304)
Ressort de clapet	Acier inox (AISI 304)
Crépine d'aspirant	Acier inox (AISI 304)
Gaine de câble	Acier inox (AISI 304)
Tirant	Acier inox (AISI 304)

OPSİYONLAR

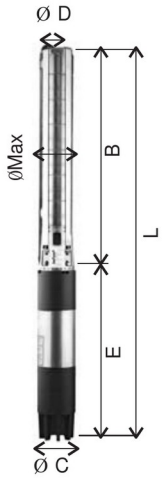
Pompa grubu : Soğutma kılıfı

OPTIONS

Motor-pump : Cooling shroud

LES OPTIONS

Moteur & Pompe: Chemise de refroidissement



POMPA TİPİ PUMP TYPE TYPE DE POMPE	MOTOR MOTEUR		OLçULER I DIMENSIONS (mm)						AOIRLIK I WEIGHT I POIDS (kg)		
	HP	kW	L	E	B	Ø = C	Ø = D	Ø MAX	MOTOR MOTEUR	POMPA PUMP POMPE	TOPLAM TOTAL
S6 SP15 I 01	0,75	0,56	709	366	343	93	2 1I2"	142	8,8	5	13,8
S6 SP15 I 02	1,5	1,1	834	431	403	93	2 1I2"	142	11,6	6,4	18
S6 SP15 I 04	3	2,2	1033	509	524	93	2 1I2"	142	14,7	9,3	24
S6 SP15 I 05	4	3	1133	548	585	93	2 1I2"	142	17,6	10,8	28,4
S6 SP15 I 06	5,5	4	1255	610	645	145	2 1I2"	145	45	12,2	57,2
S6 SP15 I 07	5,5	4	1316	610	706	145	2 1I2"	145	45	13,7	58,7
S6 SP15 I 10	7,5	5,5	1537	650	887	145	2 1I2"	145	50	18	68,0
S6 SP15 I 13	10	7,5	1759	690	1069	145	2 1I2"	145	55	22,4	77,4
S6 SP15 I 17	12,5	9,2	2041	730	1311	145	2 1I2"	145	60	28,2	88,2
S6 SP15 I 20	15	11	2272	780	1492	145	2 1I2"	145	65	32,5	97,5
S6 SP15 I 22	17,5	13	2393	780	1613	145	2 1I2"	145	65	35,4	100,4
S6 SP15 I 24	17,5	13	2514	780	1734	145	2 1I2"	145	65	38,3	103,3
S6 SP15 I 27	20	15	2796	880	1916	145	2 1I2"	145	77	42,7	119,7
S6 SP15 I 29	25	18,5	3017	980	2037	145	2 1I2"	145	88	45,6	133,6
S6 SP15 I 31	25	18,5	3138	980	2158	145	2 1I2"	145	88	48,5	136,5
S6 SP15 I 33	25	18,5	3259	980	2279	145	2 1I2"	145	88	51,4	139,4
S6 SP15 I 36	30	22	3490	1030	2460	145	2 1I2"	145	93	55,7	148,7
S6 SP15 I 38	30	22	3611	1030	2581	145	2 1I2"	145	93	58,6	151,6
S6 SP15 I 40	30	22	3732	1030	2702	145	2 1I2"	145	93	61,5	154,5

POMPA TİPİ PUMP TYPE TYPE DE POMPE	MOTOR MOTEUR		m^3/h	0,0	6,0	9,0	12,0	15,0	18,0	21,0	23,0
	HP	kW	lisn	0,00	1,67	2,50	3,33	4,17	5,00	5,83	6,39
S6 SP15 I 01	0,75	0,56	Basma Yüksekliği (m) Head In Meters Hauteur Manometrique Totale En Metres	12	11	11	10	8	7	6	4
S6 SP15 I 02	1,5	1,1		22	22	20	19	18	14	12	9
S6 SP15 I 04	3	2,2		43	42	40	38	33	29	23	18
S6 SP15 I 05	4	3		53	52	51	48	43	37	29	22
S6 SP15 I 06	5,5	4		64	63	60	56	50	43	34	27
S6 SP15 I 07	5,5	4		74	74	70	66	59	51	40	32
S6 SP15 I 10	7,5	5,5		109	107	102	95	86	74	58	48
S6 SP15 I 13	10	7,5		141	139	133	124	112	95	75	60
S6 SP15 I 17	12,5	9,2		182	182	175	163	147	126	100	80
S6 SP15 I 20	15	11		218	213	206	192	173	147	116	95
S6 SP15 I 22	17,5	13		239	237	228	212	190	163	129	105
S6 SP15 I 24	17,5	13		260	257	247	230	208	178	140	115
S6 SP15 I 27	20	15		290	288	277	259	234	200	158	128
S6 SP15 I 29	25	18,5		312	311	300	279	250	215	170	138
S6 SP15 I 31	25	18,5		335	330	318	298	269	230	181	148
S6 SP15 I 33	25	18,5		355	350	337	315	285	243	191	157
S6 SP15 I 36	30	22		391	385	371	348	313	268	210	170
S6 SP15 I 38	30	22		410	405	390	365	330	281	222	180
S6 SP15 I 40	30	22		432	428	412	384	346	296	235	190

Applications

For water supply from wells or reservoirs

For domestic use,for civil and industrial applications

For garden and irrigation

Operating conditions

Maxiumum fluid temperature up to +50ºC.

Maximum sand content : 0.25%.

Maximum immersion : 100m.

Minimum well diameter : 6 " .

Motor and pump

Rewindable motor or Hermetically-Sealed motor

Single-phase : 220V- 240V /50HZ

Three-phase : 380V - 415V /50HZ

①Direct start (1 cable)

②Star-delta start (2 cables)

Equip with start control box or digital auto-control box

NEMA dimension standards

Curve tolerance according to ISO 9906

Options on request

Special mechanical seal

Other voltages or frequency 60 HZ

Warranty : 2 years

(according to our general sales conditions).

Components	Material
Delivery casing	AISI 304 SS
Suction lantern	AISI 304 SS
Diffuser	AISI 304 SS
Impeller	AISI 304 SS
Shaft	AISI 304 SS
Shaft coupling	AISI 304 SS
Wear ring	Rubber
Motor external casing	AISI 304 SS
Top chock	① Cast-iron ASTM NO.30 ② AISI 304 SS
Bottom support	① Cast-iron ASTM NO.30 ② AISI 304 SS
Seal	NBR Graphite-SIC/TC
Shaft	AISI 304 SS-ASTM 5140
Trust bearing	① Graphite-Ceramic ② NSK
Radial bearing	① Graphite-Ceramic ② NSK

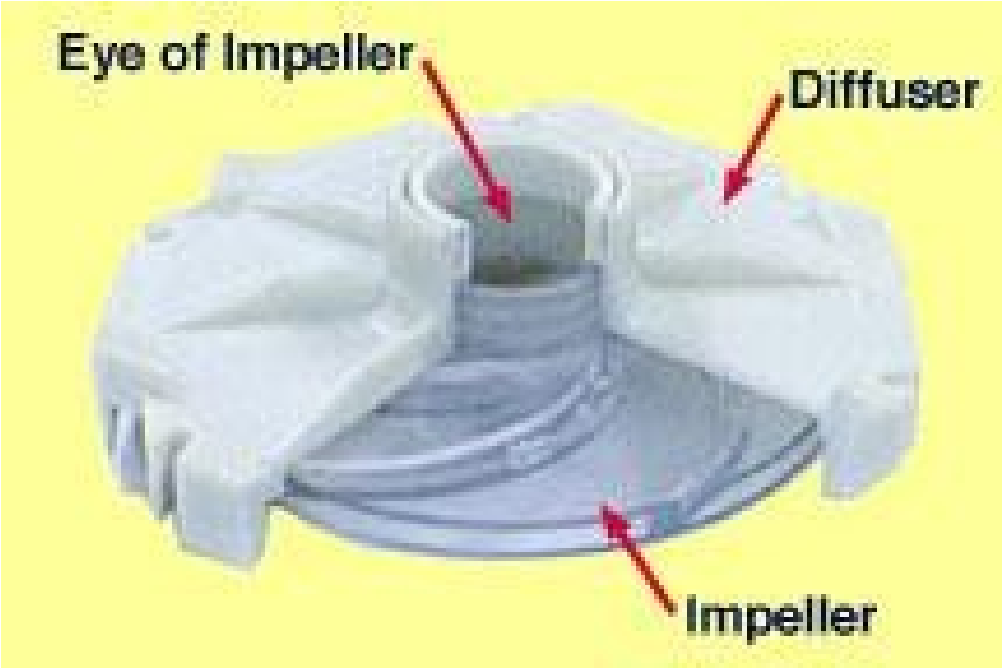
Centrifugal Pump

A centrifugal pump is of very simple design. The only moving part is an impeller attached to a shaft that is driven by the motor.

The two main parts of the pump are the **impeller** and **diffuser**.

The impeller can be made of bronze, stainless steel, cast iron, polycarbonate, and a variety of other materials. A diffuser or volute houses the impeller and captures the water off the impeller.

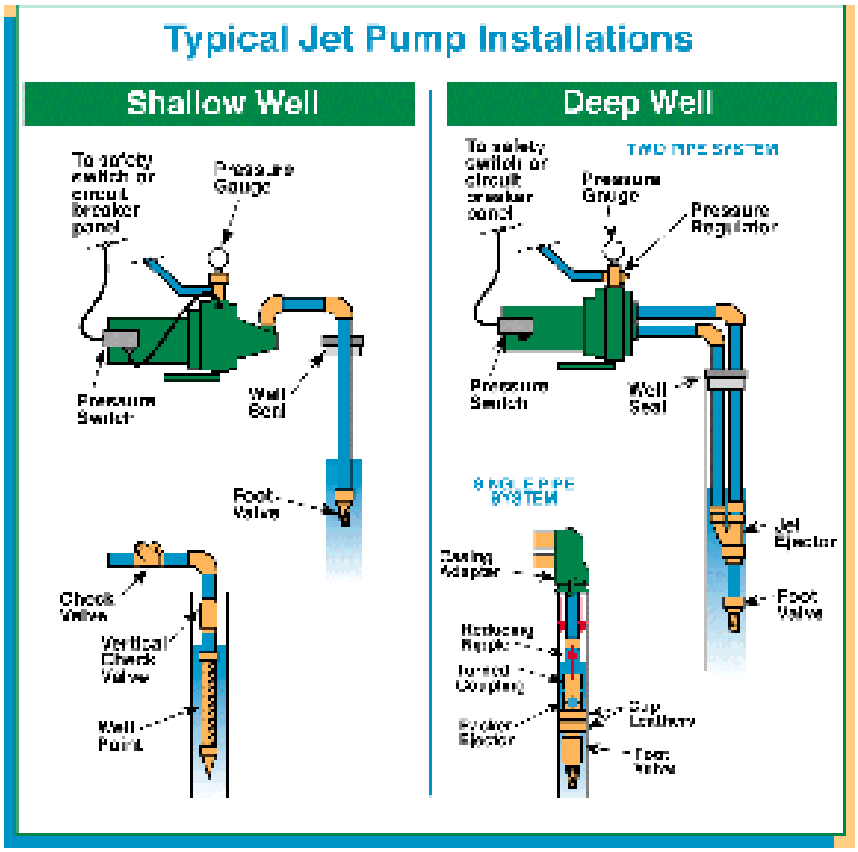
Water enters the eye of the impeller and is thrown out by centrifugal force. As water leaves the eye of the impeller a low pressure area is created causing more liquid to flow toward the inlet because of atmospheric pressure and centrifugal force. Velocity is developed as the liquid flows through the impeller while it is turning at high speeds on the shaft. The liquid velocity is collected by the diffuser or volute and converted to pressure by specially designed passageways that direct the flow to discharge into the piping system; or, on to another impeller stage for further increasing of pressure.



The head or pressure that a pump will develop is in direct relation to the impeller diameter, the number of impellers, the eye or inlet opening size, and how much velocity is developed from the speed of the shaft rotation. Capacity is determined by the exit width of the impeller. All of the these factors affect the horsepower size of the motor to be used; the more water to be pumped or pressure to be developed, the more energy is needed.

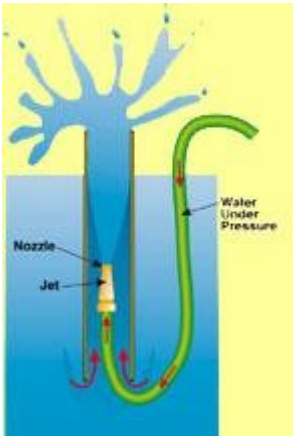
A centrifugal pump is not positive acting. As the depth to water increases, it pumps less and less water. Also, when it pumps against increasing pressure it pumps less water. For these reasons it is important to select a centrifugal pump that is designed to do a particular pumping job. For higher pressures or greater lifts, two or more impellers are commonly used; or, a jet ejector is added to assist the impellers in raising the pressure.

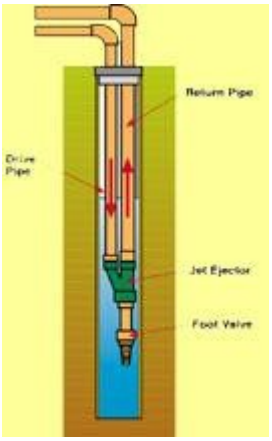
JET PUMPS



Jet Pumps are mounted above ground and lift the water out of the ground through a suction pipe. Jets are popular in areas with high water tables and warmer climates. There are two categories of jet pumps and pump selection varies depending on water level. Shallow well installations go down to a water depth of about 25 feet. Deep wells are down 150 feet to water, where surface pumps are involved.

The jet pump is a centrifugal pump with one or more impeller and diffuser with the addition of a jet ejector. A JET EJECTOR consists of a matched nozzle and venturi. The nozzle receives water at high pressure. As the water passes through the jet, water speed (velocity) is greatly increased, but the pressure drops. This action is the same as the squirting action you get with a garden hose as when you start to close the nozzle. The greatly increased water speed plus the low pressure around the nozzle tip, is what causes suction to develop around the jet nozzle. Water around a jet nozzle is drawn into the water stream and carried along with it.



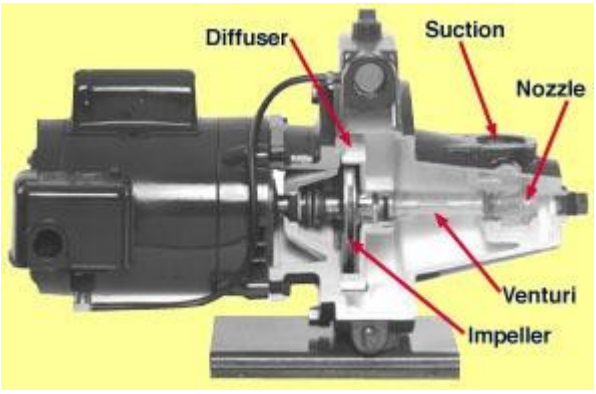


For a jet nozzle to be effective it must be combined with a venturi. The venturi changes the high-speed jet stream back to a high-pressure for delivery to the centrifugal pump. The jet and venturi are simple in appearance but they have to be well engineered and carefully matched to be efficient for various pumping conditions. The jet nozzle and venturi are also known as ejectors/ejector kits.

On a shallow-well jet pump the ejector kit (jet nozzle and venturi) is located in the pump housing in front of the impeller.

A portion of the suction water is recirculated through the ejector with the rest going to the pressure tank. With the ejector located on the suction side of the pump, the suction is increased considerably. This enables a centrifugal pump to increase its effective suction lift from about 20 feet to as much as 28 feet. But, the amount of water delivered to the storage tank becomes less as the distance from the pump to the water increases... more water has to be recirculated to operate the ejector.

The difference between a deep-well jet pump and a shallow-well jet pump is the location of the ejector. The deep-well ejector is located in the well below the water level. The deep-well ejector works in the same way as the shallow-well ejector. Water is supplied to it under pressure from the pump. The ejector then returns the water plus an additional supply from the well, to a level where the centrifugal pump can lift it the rest of the way by suction.

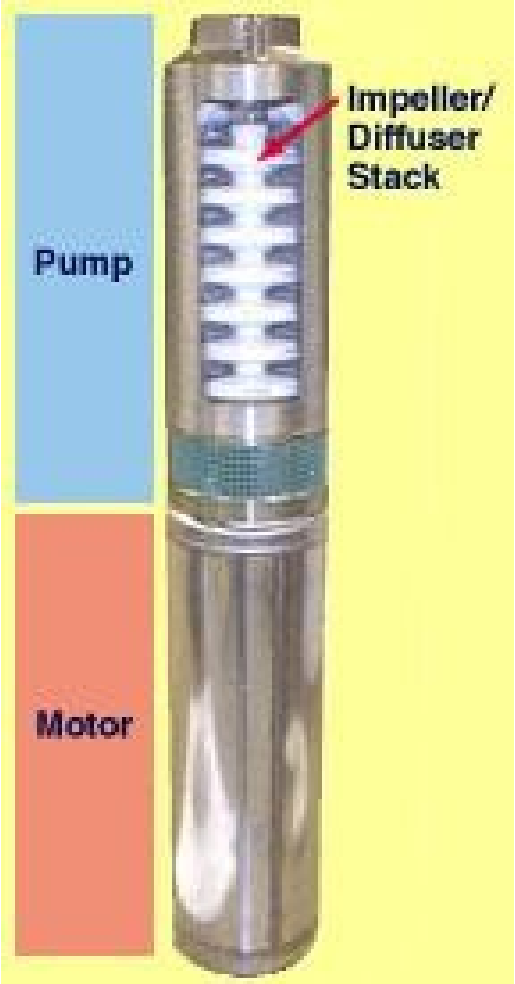


A convertible jet pump allows for shallow-well operation with the ejector mounted on the end of the pump body. This type of pump can be converted to a deep-well jet pump by installing the ejector below the water level. This is of particular value when you have a water level that is gradually lowering. This will probably require a change of venturi to work efficiently. Because jet pumps are centrifugal pumps, the air handling characteristics are such that the pump should be started with the pump and piping connections to the water supply completely filled with water.

With a shallow-well jet pump, the ejector is mounted close to the pump impeller. With a deep well jet pump, the ejector is usually mounted just above the water level in the well, or else submerged below water level.

Centrifugal pumps, both the shallow-well and deep well types have little or no ability to pump air. When starting, the pump and suction line needs to have all of the air removed. An air leak in the suction line will cause the pump to quit pumping ... or sometimes referred to as "losing its prime".

SUBMERSIBLE PUMP



The submersible pump is a centrifugal pump. Because all stages of the pump end (wet end) and the motor are joined and submerged in the water, it has a great advantage over other centrifugal pumps. There is no need to recirculate or generate drive water as with jet pumps, therefore, most of its energy goes toward "pushing" the water rather than fighting gravity and atmospheric pressure to draw water.

Virtually all submersibles are "multi-stage" pumps. All of the impellers of the multi-stage submersible pump are mounted on a single shaft, and all rotate at the same speed. Each impeller passes the water to the eye of the next impeller through a diffuser. The diffuser is shaped to slow down the flow of water and convert velocity to pressure. Each impeller and matching diffuser is called a stage. As many stages are used as necessary to push the water out of the well at the required system pressure and capacity. Each time water is pumped from one impeller to the next, its pressure is increased.

The pump and motor assembly are lowered into the well by connecting piping to a position

below the water level. In this way the pump is always filled with water (primed) and ready to pump. Because the motor and pump are under water they operate more quietly than above ground installations; and, pump freezing is not a concern.

We can stack as many impellers as we need; however, we are limited to the horsepower of the motor. We can have numerous pumps that have 1/2 HP ratings - pumps that are capable of pumping different flows at different pumping levels; they will, however, always be limited to 1/2 HP. Another way to look at it is that a pump will always operate somewhere along its design curve.

To get more flow, the exit width of the impeller is increased and there will then be less pressure (or head) that the pump will develop because there will be less impellers on a given HP size pump. Remember, the pump will always trade-off one for the other depending on the demand of the system. If the system demands more than a particular pump can produce, it will be necessary to go up in horsepower; thereby, allowing us to stack more impellers or go to different design pump with wider impellers.