

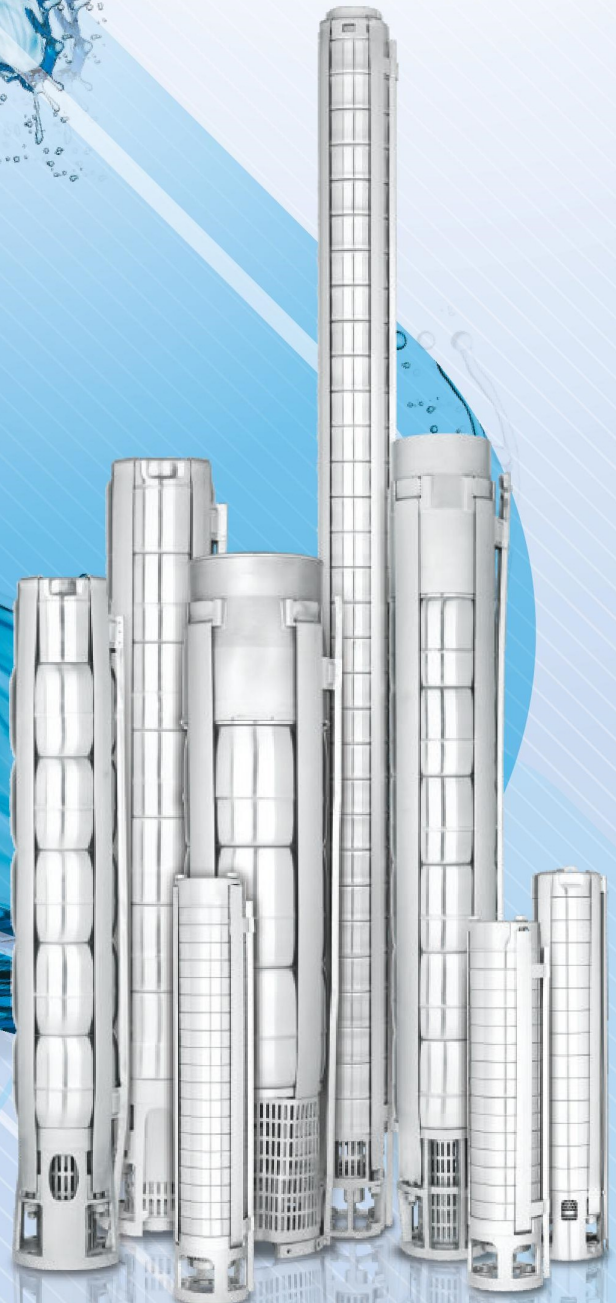
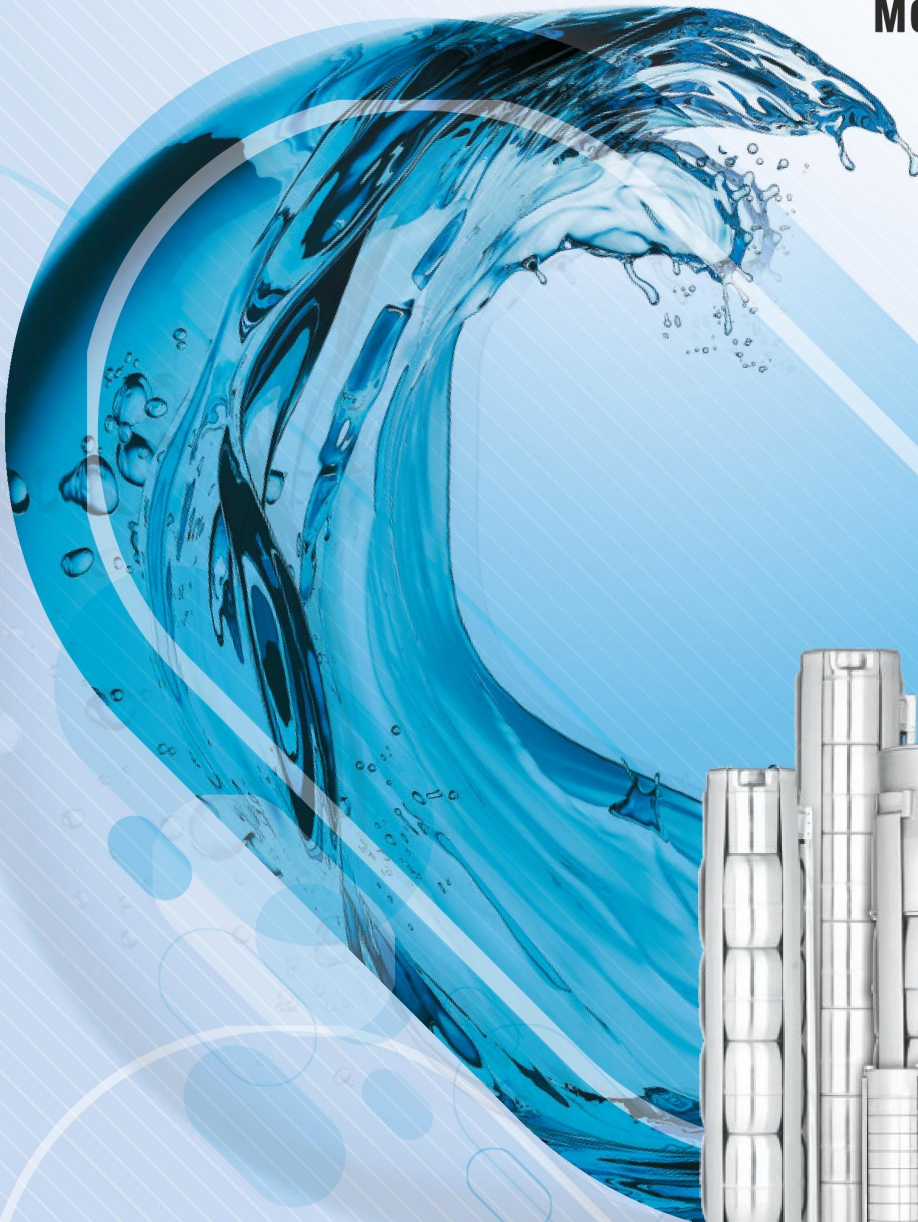


Since 1969

Unnati[®]

MOTORS | PUMPS

50 Hz



TOGETHER WE CAN DO IT
TOGETHER WE HAVE ALWAYS DONE IT



QUALITY POLICY

"UNNATI" aims to meet customer requirements and expectations by supply quality product on schedule time and continually improve the effectiveness of the quality management system".

QUALITY OBJECTIVES

The quality objective of unnati management is to supply only that product, which meets customer requirements as per international standards of quality, performance, reliability, specified by him. And only those items will be submitted to him for acceptance, which fully meet the inherent requirements of product.

Also every step is taken to establish and maintain an effective and efficient quality program planned and developed in conjunction with other management functions by first time right principles.



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Introduction

Submersible bore well pumps for 4" wells (DN 100mm), 6" (DN 150mm), 8" (DN 200mm), 10" (DN 250mm) are constructed out of stainless steel AISI 304 (stainless steel AISI 316 material available on request)

Size for connection to the motor according NEMA standards up to 8" motor joining.

Delivery casing with built-in non-return valve.

Impellers:

Radial flow impellers

- 4" : USP2, USP3, USP5
Mixed flow impellers
- 4" : USP8, USP14
- 6" : USP12, USP14A, USP17, USP30, USP46, USP60
- 8" : USP77, USP95
- 10" : USP125, USP160, USP215

Connection:

Screwed pipe connection with BSP thread as standard.

BSP thread pipe connection are available on request.

Operating conditions

- Flow range : Max. 282 m³/h
- Head range : Max. 750 m
- Liquid temperature : 0°C to +45°C
- Max. sand content into the water : 50 g/m³

Nomenclature:

Example	USP	46	-5	-A	B	N
Type range (USP)						
Pump type						
Number of impellers						
First impeller with reduced diameter (A, B or C)						
Second impeller with reduced diameter (A, B or C)						
Stainless steel parts of material						
= AISI 304 (DIN W.-Nr. 1.4301) (Standard construction)						
N = AISI 316 (DIN W.-Nr. 1.4401)						

Liquid suitable for pumping:

These pumps are designed for liquids which are thin, clean, non-aggressive, non-explosive, not containing solid particles or fibres.

Special versions made of stainless steel AISI 316 are available for applications involving aggressive liquids.

Curve conditions

The conditions below apply to the curves shown the following pages.

General

- Tolerances in accordance with ISO 9906.
- The motors used for the measurement are standard motors.
- Test results with clean cold water, without gas content. Measurements have been made with airless water at a temperature of 20°C.
- Head and power values valid for liquids with density = 1.0 kg/dm³ and kinematic viscosity $\nu = \max 1 \text{ mm}^2/\text{s}$ (1 cSt).
- When pumping liquids with a density higher than that of water, motors with correspondingly higher outputs must be used.
- The QH curves apply to a rated motor speed of 2900 min⁻¹.
- The performance curves are inclusive of possible losses such as non-return valve losses.
- A safety margin of + 2 feet is recommend for the NPSH value.

4" curves

- QH: The curves are inclusive of valve and inlet losses at the actual speed.
- Power curve: The power curve shows pump power input at the actual speed for one stage.
- Efficiency curve: p% shows pump stage efficiency.

6", 8" & 10" curves

- QH: The curves are inclusive of valve and inlet losses at the actual speed. Operation without non-return valve will increase the actual head at nominal performance by 0.5 to 1m.
- NPSH: The curve is inclusive of suction interconnector and shows required inlet pressure.
- Power curve: The power curve shows pump power input at the actual speed for one stage.
- Efficiency curve: p% show pump stage efficiency.



Performance Range

Stainless steel submersible bore well pumps

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Model	Borewell Dia.	Discharge Range (m ³ /h)	Head Range (Mtrs)	Del. (BSP)
USP2	4"	0-2.7	10-547	1 ¼"
USP3	4"	0-4.3	10-434	1 ¼"
USP5	4"	0-6.7	9-542	1 ¼"
USP8	4"	0-11.4	11-434	2"
USP14	4"	0-18.8	12-164	2"
USP12	6"	0-18.33	4-460	3"
USP14A	6"	0-18	6-462	3"
USP17	6"	0-22.1	4-671	3"
USP30	6"	0-39	3-565	3"
USP46	6"	0-60	0-508	3¾"
USP60	6"	0-79	0-323	3¾"
USP77	8"	0-100	7-403	5"
USP95	8"	0-123.8	6-423	5"
USP125	10"	0-162.5	5-495	6"
USP160	10"	0-217	4-161	6"
USP215	10"	0-280	3-195	6"



Product Range

Stainless steel submersible bore well pumps

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**USP2, USP3
& USP5**



USP8



USP14



**USP12,
14A, 17**



USP30



USP46 & USP60



USP77 & USP95



**USP125
& USP160**



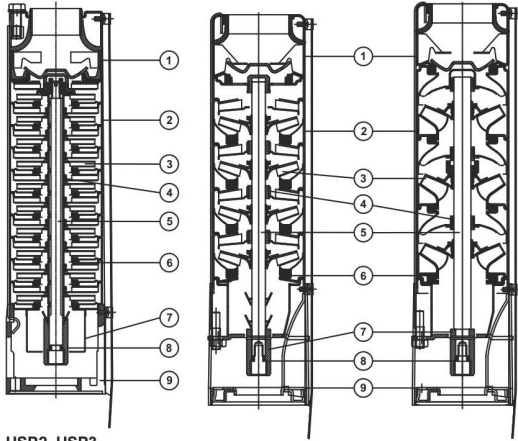
USP215





Sectional drawing & Materials

4" Stainless steel submersible bore well pumps



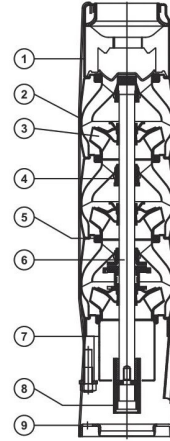
USP2, USP3,
USP5

USP8

USP14

Pos.	Component	Material
01	Delivery casing	Stainless steel AISI 304 / Cf8
02	Diffuser	Stainless steel AISI 304
03	Impeller	Stainless steel AISI 304
04	Bearing	NBR
05	Pump shaft	Stainless steel AISI 410 / 304
06	Neck ring	NBR
07	Strainer	Stainless steel AISI 304
08	Coupling	Stainless steel AISI 304
09	Suction inter connector	Stainless steel AISI 304

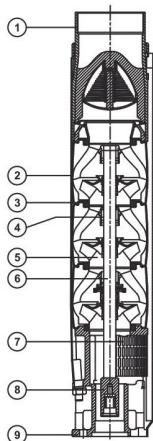
6" Stainless steel submersible bore well pumps



USP12, USP14A, USP17, USP30, USP46, USP60

Pos.	Component	Material
01	Delivery casing	Stainless steel AISI 304
02	Diffuser	Stainless steel AISI 304
03	Impeller	Stainless steel AISI 304
04	Bearing	NBR
05	Neck ring	NBR
06	Pump shaft	Stainless steel AISI 431
07	Strainer	Stainless steel AISI 304
08	Coupling	Stainless steel AISI 304
09	Suction inter connector	Stainless steel AISI 304
10	Upper Thrust	Stainless steel AISI 304 / NR

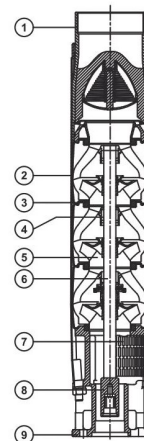
8" Stainless steel submersible bore well pumps



USP77, USP95

Pos.	Component	Material
01	Delivery casing	Stainless steel AISI 304 / CF8
02	Diffuser	AISI 304
03	Neck ring	NBR
04	Bearing	NBR
05	Impeller	AISI 304
06	Pump shaft	AISI 431
07	Strainer	Stainless steel AISI 304
08	Coupling	AISI 304
09	Suction inter connector	Stainless steel AISI 304 / CF8

10" Stainless steel submersible bore well pumps



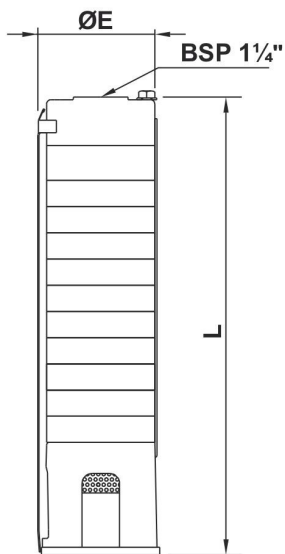
USP125, USP160, USP215

Pos.	Component	Material
01	Delivery casing	Stainless steel AISI 304 / Cf8
02	Diffuser	Stainless steel AISI 304
03	Neck ring	NBR
04	Bearing	NBR
05	Impeller	Stainless steel AISI 304
06	Pump shaft	Stainless steel AISI 431
07	Strainer	Stainless steel AISI 304
08	Coupling	Stainless steel AISI 304
09	Suction inter connector	Stainless steel AISI 304 / Cf8



Performance Table

Model Name	kW	HP	Stage	Q	n = 2900 rpm					
				m ³ /h	0	0.4	1.2	1.6	1.9	2.7
				L/min	0	6.7	20	27	33	45
USP2/6	0.37	0.50	6	H mts.	36	35	32	29	24	10
USP2/9	0.37	0.50	9		54	52	47	41	34	14
USP2/13	0.55	0.75	13		78	76	67	59	50	21
USP2/18	0.75	1.00	18		108	105	93	83	69	29
USP2/23	1.10	1.50	23		138	135	120	107	90	39
USP2/28	1.50	2.00	28		168	165	147	132	110	48
USP2/33	1.50	2.00	33		196	192	171	154	128	54
USP2/40	2.20	3.00	40		245	239	213	190	158	62
USP2/48	2.20	3.00	48		292	284	252	225	185	70
USP2/55	3.00	4.00	55		336	327	290	260	214	85
USP2/65	3.00	4.00	65		394	385	340	302	249	94
USP2/75	4.00	5.50	75		458	447	397	355	293	118
USP2/90	4.00	5.50	90		547	532	469	419	344	129



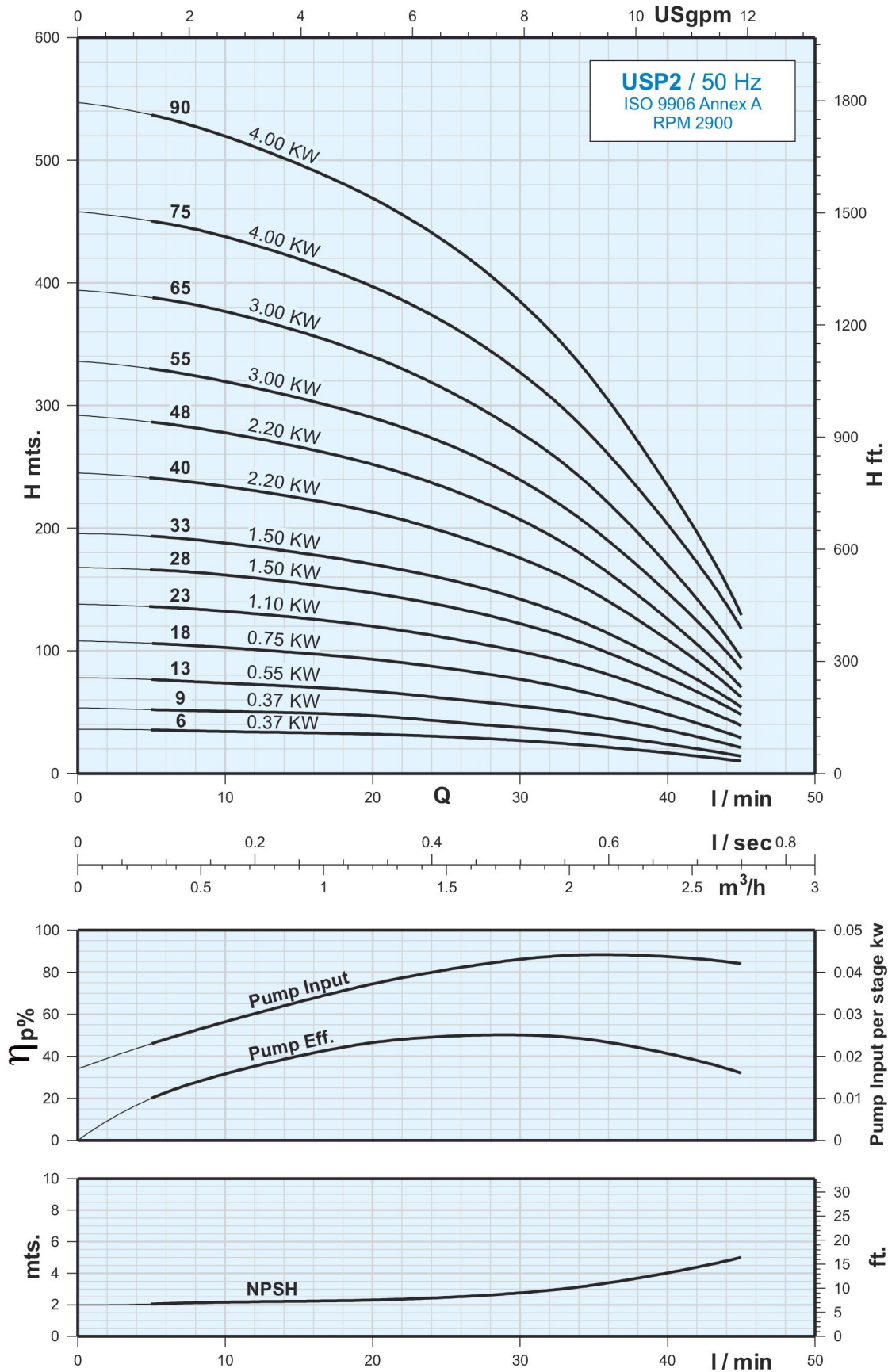
Dimensions & Weights

Model Name	Motor Joining Size	ØE (mm)	L (mm)	Pump Gross Weight (kg)	Pump Gross Volume (m ³)
USP2/6	4"	101	410	4.0	0.0050
USP2/9	4"	101	473	4.9	0.0057
USP2/13	4"	101	557	6.2	0.0067
USP2/18	4"	101	662	7.8	0.0080
USP2/23	4"	101	767	9.4	0.0093
USP2/28	4"	101	872	10.9	0.0106
USP2/33	4"	101	977	12.5	0.0118
USP2/40	4"	101	1124	14.8	0.0136
USP2/48	4"	101	1292	17.3	0.0156
USP2/55	4"	101	1439	19.5	0.0174
USP2/65	4"	101	1649	34.7	0.0200
USP2/75	4"	101	1859	37.9	0.0225
USP2/90	4"	108	2174+	42.6	0.0263

USP2/90 is mounted in sleeve / adapter optional



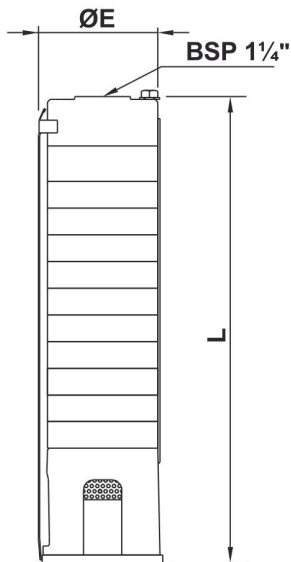
Performance Curve





Performance Table

Model Name	kW	HP	Stage	Q	n = 2900 rpm					
				m ³ /h	0	0.8	1.6	2.4	3.1	4.3
				L/min	0	13	27	40	53	73
USP3/6	0.37	0.50	6	H mts.	38	36	33	30	24	10
USP3/9	0.55	0.75	9		57	54	50	44	36	15
USP3/12	0.75	1.00	12		76	72	67	60	49	20
USP3/15	1.10	1.50	15		95	90	84	76	62	26
USP3/18	1.10	1.50	18		113	107	100	90	73	30
USP3/22	1.50	2.00	22		139	131	122	110	89	38
USP3/25	1.50	2.00	25		157	149	138	124	100	41
USP3/29	2.20	3.00	29		184	174	163	147	120	52
USP3/33	2.20	3.00	33		209	197	184	166	135	57
USP3/39	3.00	4.00	39		246	233	220	201	170	90
USP3/45	3.00	4.00	45		282	267	252	230	193	100
USP3/52	4.00	5.50	52		328	310	294	269	227	120
USP3/60	4.00	5.50	60		378	357	336	306	258	134
USP3/75	5.50	7.50	75		434	408	378	343	291	162

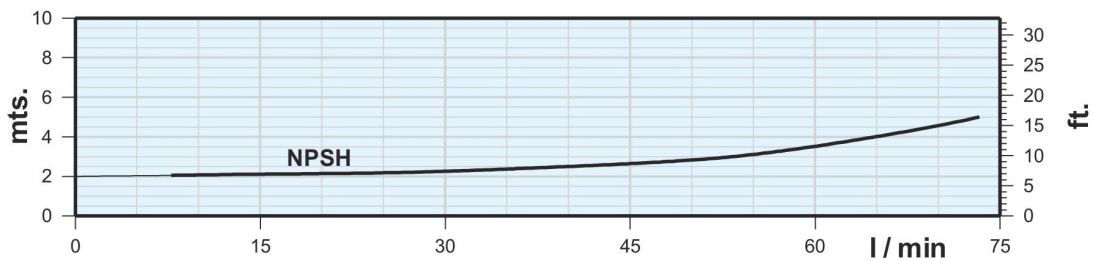
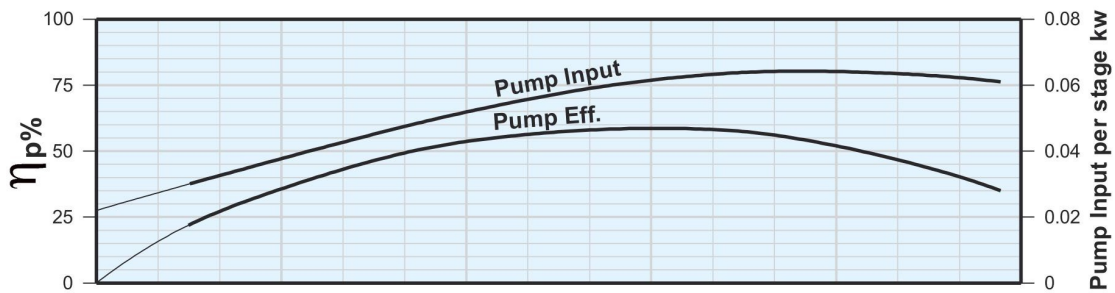
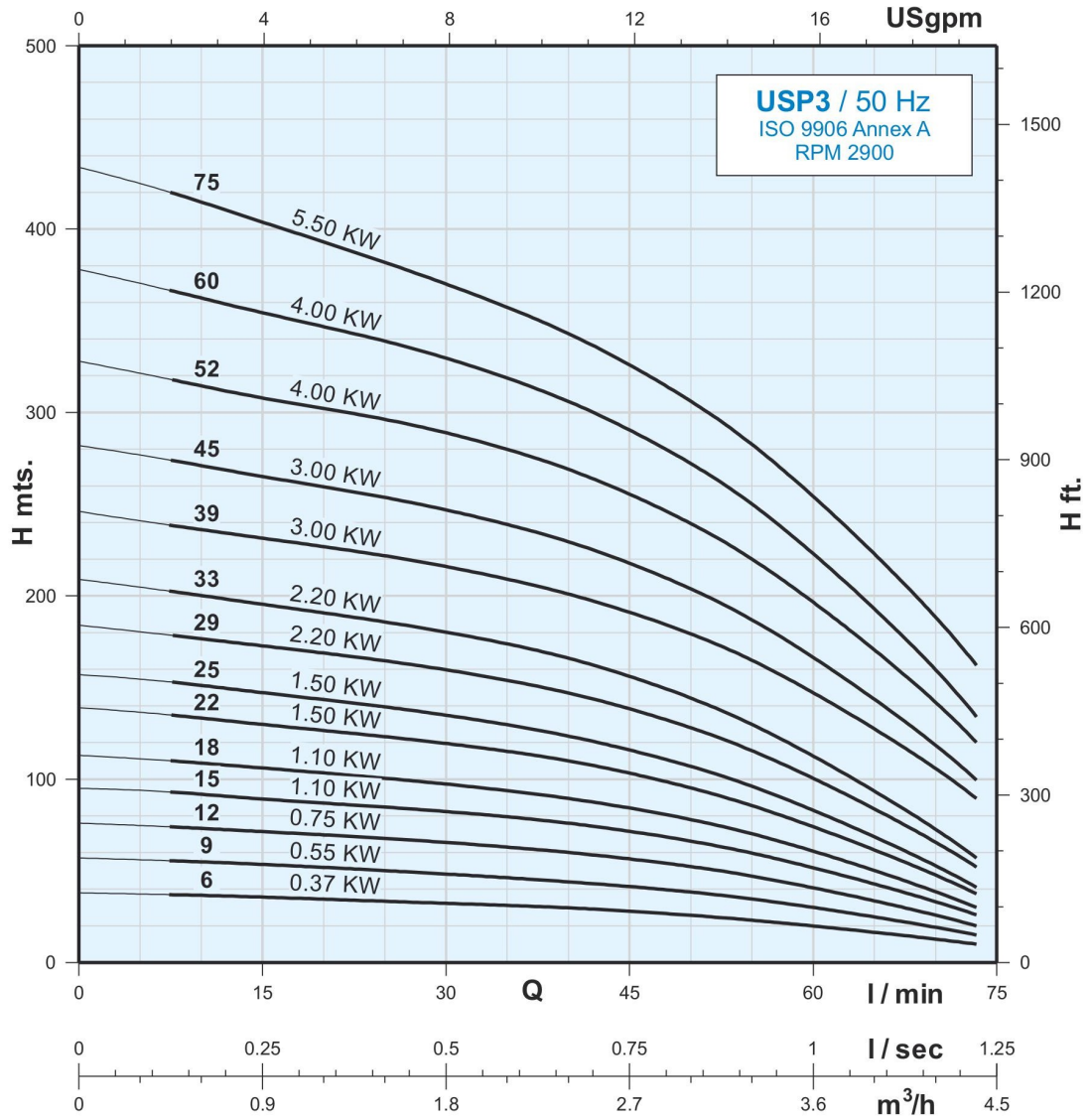


Dimensions & Weights

Model Name	Motor Joining Size	ØE (mm)	L (mm)	Pump Gross Weight (kg)	Pump Gross Volume (m ³)
USP3/6	4"	101	410	4.0	0.0050
USP3/9	4"	101	473	4.9	0.0057
USP3/12	4"	101	536	5.9	0.0065
USP3/15	4"	101	599	6.8	0.0072
USP3/18	4"	101	662	7.8	0.0080
USP3/22	4"	101	746	9.0	0.0090
USP3/25	4"	101	809	10.0	0.0098
USP3/29	4"	101	893	11.3	0.0108
USP3/33	4"	101	977	12.5	0.0118
USP3/39	4"	101	1103	14.4	0.0133
USP3/45	4"	101	1229	16.3	0.0149
USP3/52	4"	101	1376	18.6	0.0166
USP3/60	4"	101	1544	21.1	0.0187
USP3/75	4"	101	1859	25.9	0.0225



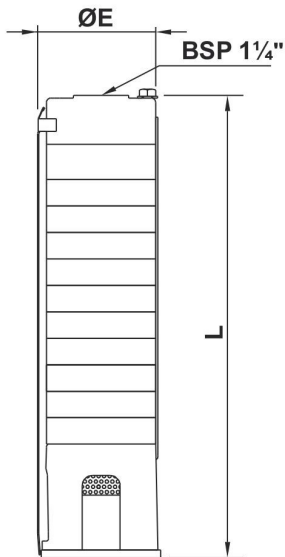
Performance Curve





Performance Table

Model Name	kW	HP	Stage	Q	n = 2900 rpm					
				m ³ /h	0	0.7	2.4	4	5.5	67
				L/min	0	13	40	67	93	113
USP5/4	0.37	0.50	4	H mts.	26	24	23	20	14	-
USP5/6	0.55	0.75	6		39	36	32	29	20	11
USP5/8	0.75	1.00	8		51	48	44	38	27	15
USP5/12	1.10	1.50	12		77	72	65	57	40	22
USP5/17	1.50	2.00	17		109	103	92	80	57	30
USP5/21	2.20	3.00	21		135	127	116	100	73	40
USP5/25	2.20	3.00	25		160	150	137	118	84	45
USP5/33	3.00	4.00	33		211	198	179	154	110	59
USP5/38	4.00	5.50	38		250	236	213	186	134	72
USP5/44	4.00	5.50	44		281	265	239	207	148	80
USP5/52	5.50	7.50	52		333	315	285	249	179	100
USP5/60	5.50	7.50	60		384	365	326	283	202	110
USP5/75	7.50	10.0	75		480	453	409	355	254	137
USP5/85	7.50	10.0	85		542	510	459	397	280	150



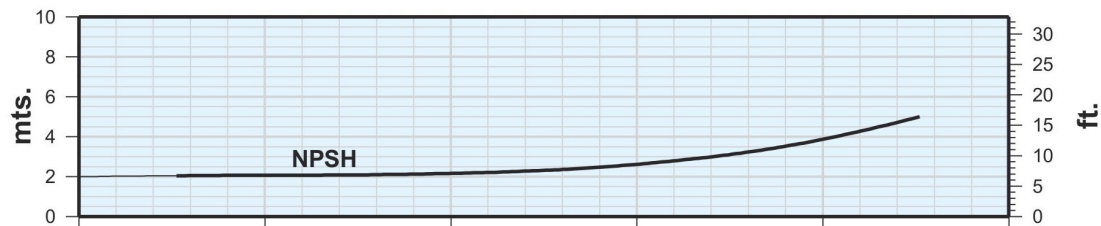
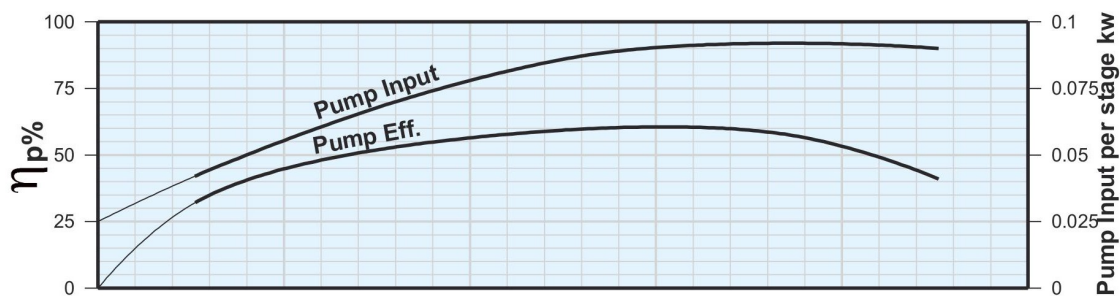
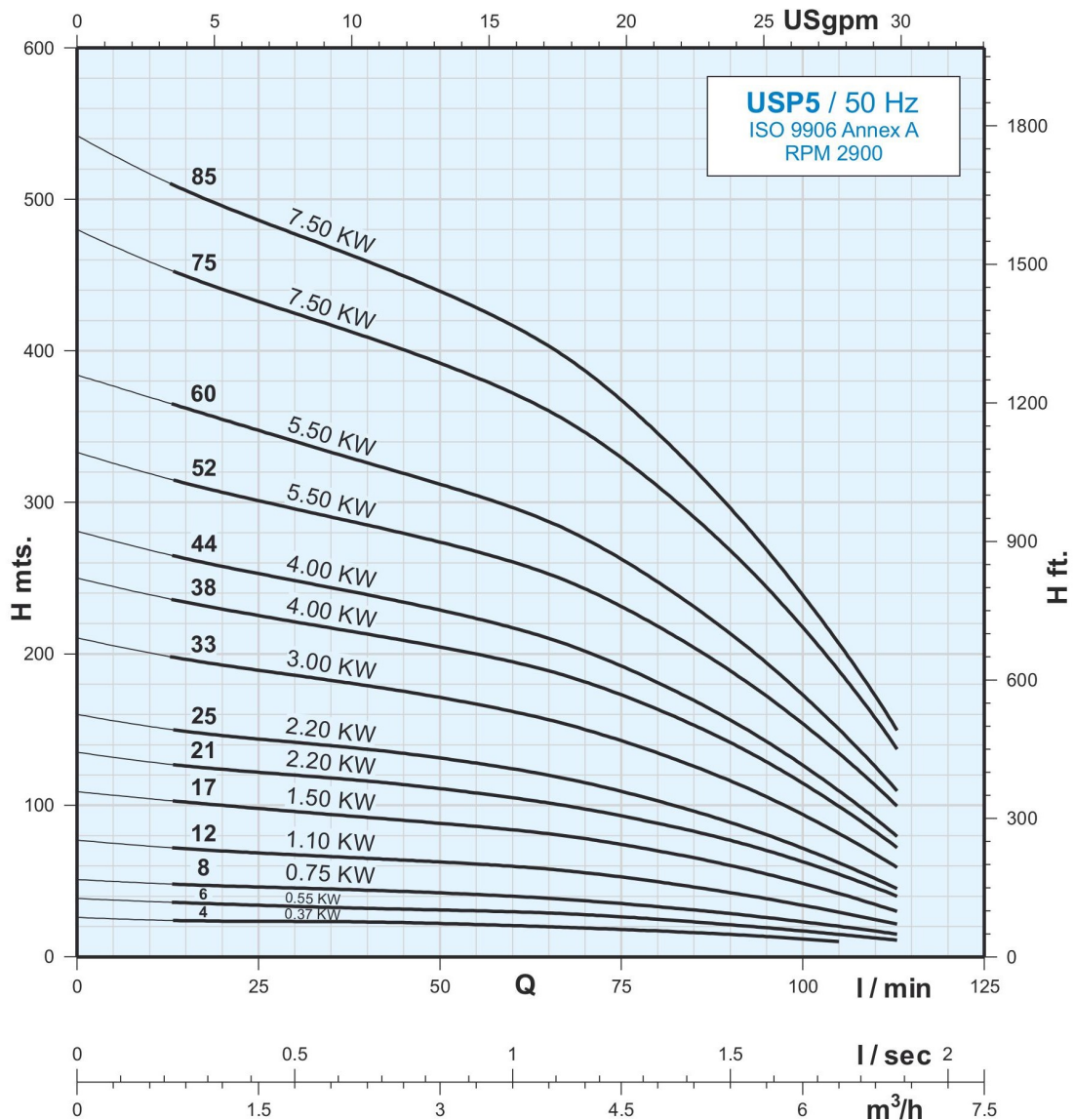
USP5/85 is mounted in sleeve / adapter optional

Dimensions & Weights

Model Name	Motor Joining Size	ØE (mm)	L (mm)	Pump Gross Weight (kg)	Pump Gross Volume (m ³)
USP5/4	4"	101	368	3.3	0.0045
USP5/6	4"	101	410	4.0	0.0050
USP5/8	4"	101	452	4.6	0.0055
USP5/12	4"	101	536	5.9	0.0065
USP5/17	4"	101	641	7.4	0.0078
USP5/21	4"	101	725	8.7	0.0088
USP5/25	4"	101	809	10.0	0.0098
USP5/33	4"	101	977	12.5	0.0118
USP5/38	4"	101	1082	14.1	0.0131
USP5/44	4"	101	1208	16.0	0.0146
USP5/52	4"	101	1376	18.6	0.0166
USP5/60	4"	101	1544	21.1	0.0187
USP5/75	4"	101	1859	25.9	0.0225
USP5/85	4"	108	2069	29.1	0.0250
USP5/75	6"	142	2159	26.9	0.0864
USP5/85	6"	142	2369	30.1	0.0948



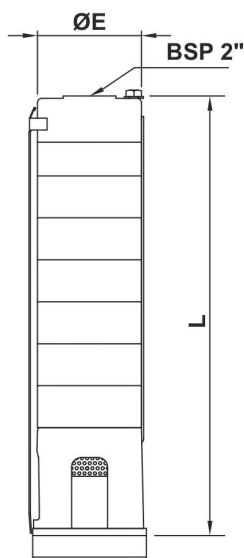
Performance Curve





Performance Table

Model Name	kW	HP	Stage	Q	n = 2900 rpm					
				m ³ /h	0	3	4.9	6.4	7.9	11.4
				L/min	0	50	83	108	133	190
USP8/5	0.75	1.00	5	H mts.	30	27	25	23	20	11
USP8/7	1.10	1.50	7		41	38	35	32	29	15
USP8/10	1.50	2.00	10		60	54	49	45	40	22
USP8/12	2.20	3.00	12		73	65	60	56	50	29
USP8/15	2.20	3.00	15		90	80	73	68	61	33
USP8/18	3.00	4.00	18		108	96	87	81	73	40
USP8/21	4.00	5.50	21		127	113	104	97	88	49
USP8/25	4.00	5.50	25		150	134	123	114	104	56
USP8/30	5.50	7.50	30		180	160	146	136	121	64
USP8/37	5.50	7.50	37		221	195	178	165	147	75
USP8/44	7.50	10.0	44		263	230	210	196	177	90
USP8/50	7.50	10.0	50		298	260	236	220	198	100
USP8/58	9.30	12.5	58		346	304	275	256	230	117
USP8/66	11.0	15.0	66		394	345	315	294	265	133
USP8/73	11.0	15.0	73		434	380	344	320	290	144



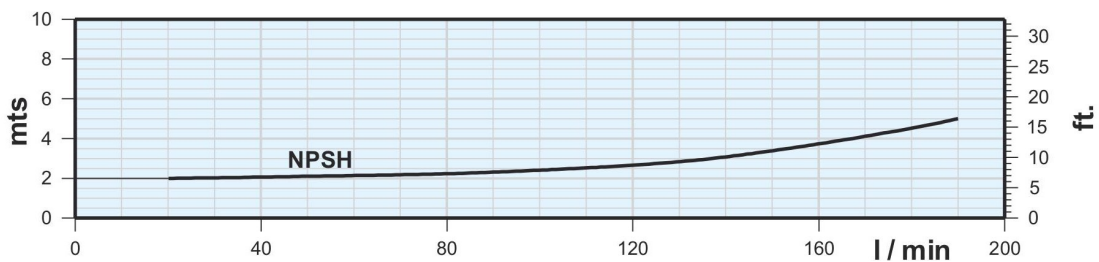
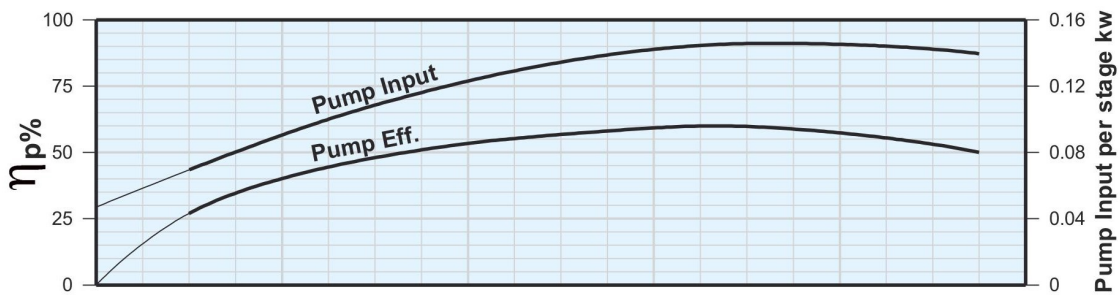
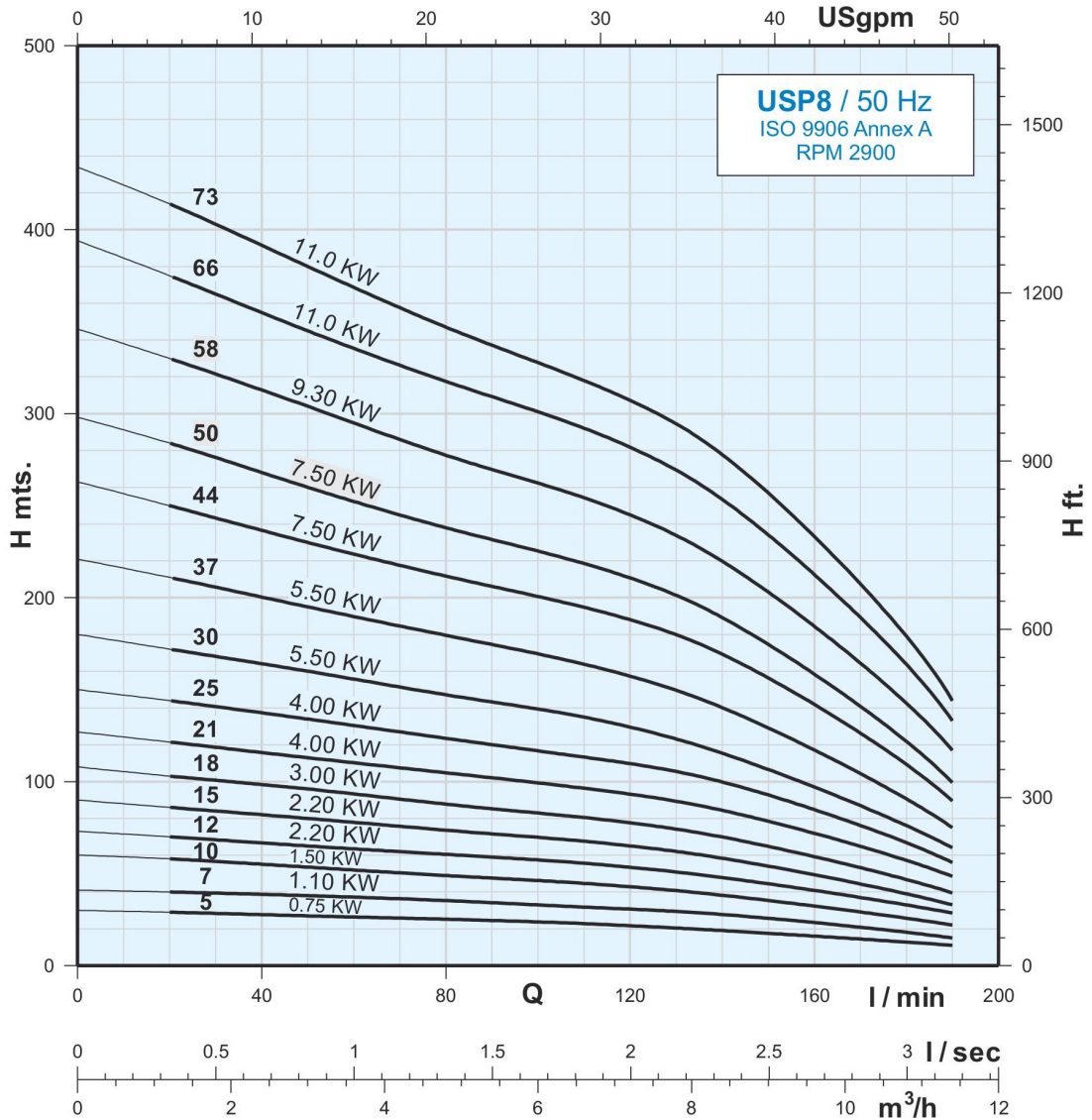
USP8/73 is mounted in sleeve / adapter optional

Dimensions & Weights

Model Name	Motor Joining Size	ØE (mm)	L (mm)	Pump Gross Weight (kg)	Pump Gross Volume (m ³)
USP8/5	4"	101	549	7.0	0.0066
USP8/7	4"	101	633	8.1	0.0077
USP8/10	4"	101	759	9.6	0.0092
USP8/12	4"	101	843	10.6	0.0102
USP8/15	4"	101	969	12.2	0.0117
USP8/18	4"	101	1095	13.7	0.0132
USP8/21	4"	101	1221	15.3	0.0148
USP8/25	4"	101	1389	17.3	0.0168
USP8/30	4"	101	1599	19.9	0.0193
USP8/37	4"	101	1893	23.5	0.0229
USP8/44	4"	101	2187	27.1	0.0265
USP8/50	4"	101	2439	30.2	0.0295
USP8/44	6"	142	2487	28.1	0.0995
USP8/50	6"	142	2739	31.2	0.1096
USP8/58	6"	142	2775	34.3	0.0336
USP8/66	6"	142	3111	38.4	0.0376
USP8/73	6"	142	3237	39.9	0.0399



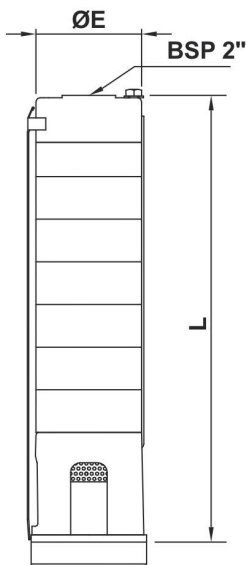
Performance Curve





Performance Table

Model Name	kW	HP	Stage	Q	n = 2900 rpm					
				m ³ /h	0	4	7.9	12	16	18.8
				L/min	0	68	133	200	267	313
USP14/5	1.50	2.00	5	H mts.	33	33	30	26	19	12
USP14/7	2.20	3.00	7		46	46	42	37	27	18
USP14/10	3.00	4.00	10		66	66	60	52	38	24
USP14/13	4.00	5.50	13		86	86	78	67	50	32
USP14/18	5.50	7.50	18		119	118	108	94	69	44
USP14/25	7.50	10.0	25		164	164	148	129	94	60

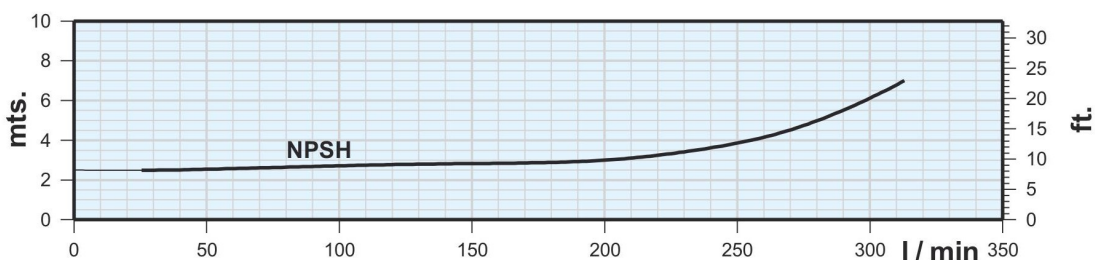
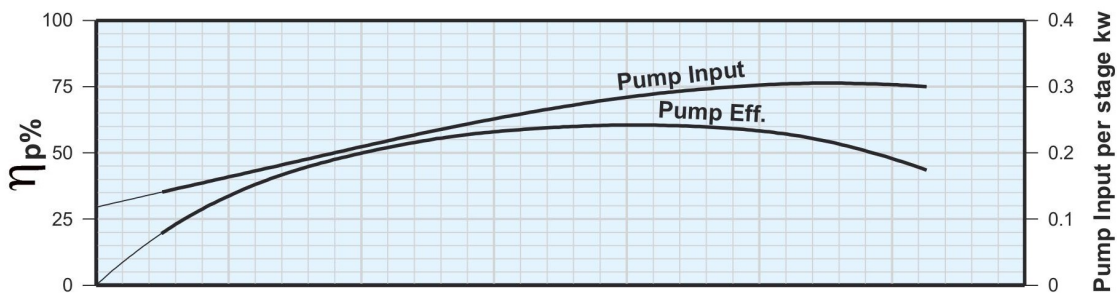
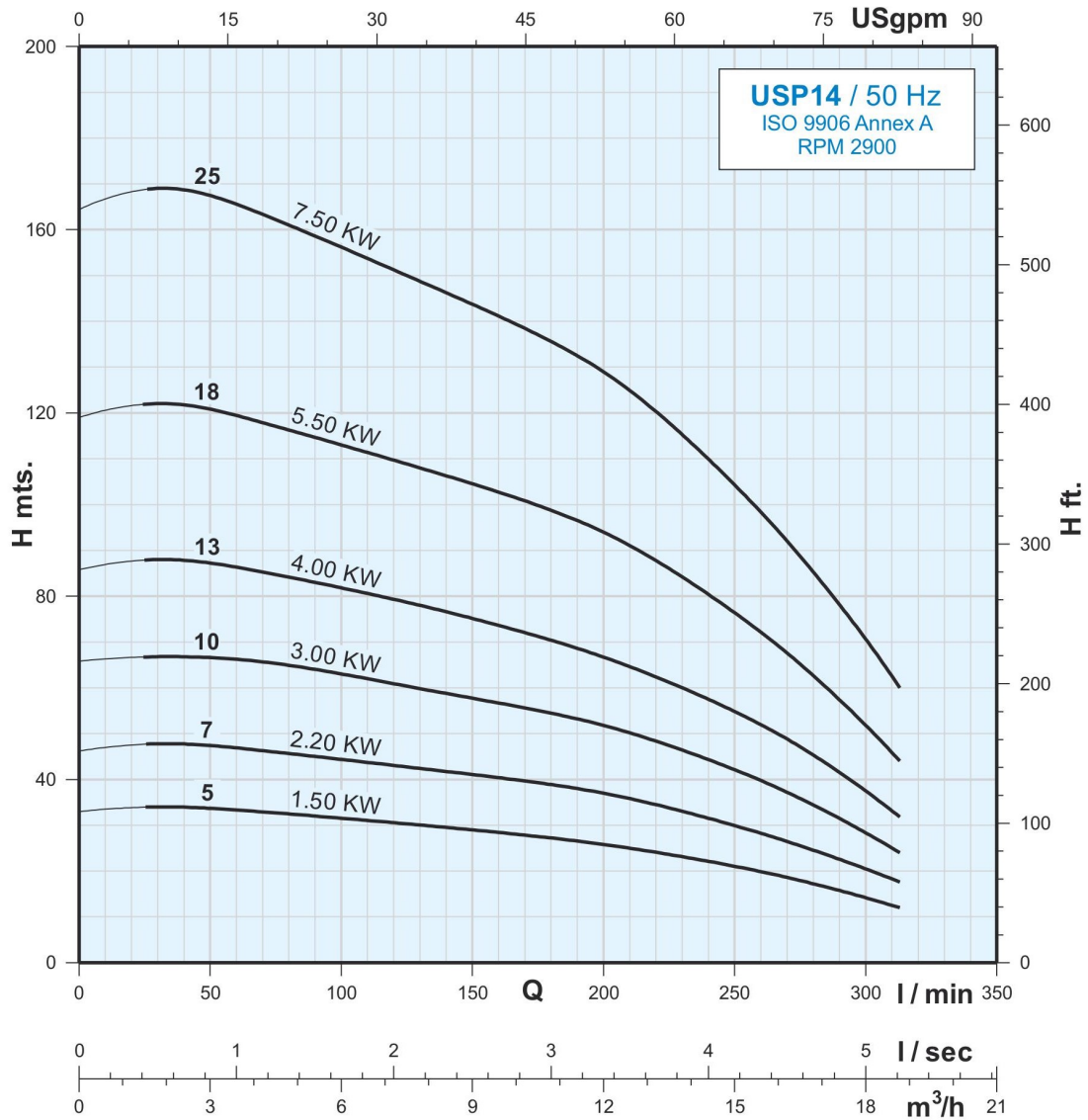


Dimensions & Weights

Model Name	Motor Joining Size	ØE (mm)	L (mm)	Pump Gross Weight (kg)	Pump Gross Volume (m ³)
USP14/5	4"	101	510	6.2	0.0106
USP14/7	4"	101	640	7.8	0.0106
USP14/10	4"	101	835	10.2	0.0106
USP14/13	4"	101	1030	12.8	0.0162
USP14/18	4"	101	1355	16.8	0.0162
USP14/25	4"	101	1810	22.9	0.0204
USP14/25	6"	142	1872	6.2	0.0540



Performance Curve



Disclaimer : Due to continual up gradation in design & specification in motor the technical details illustrated in this catalogue may differ with that of actual motor.



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