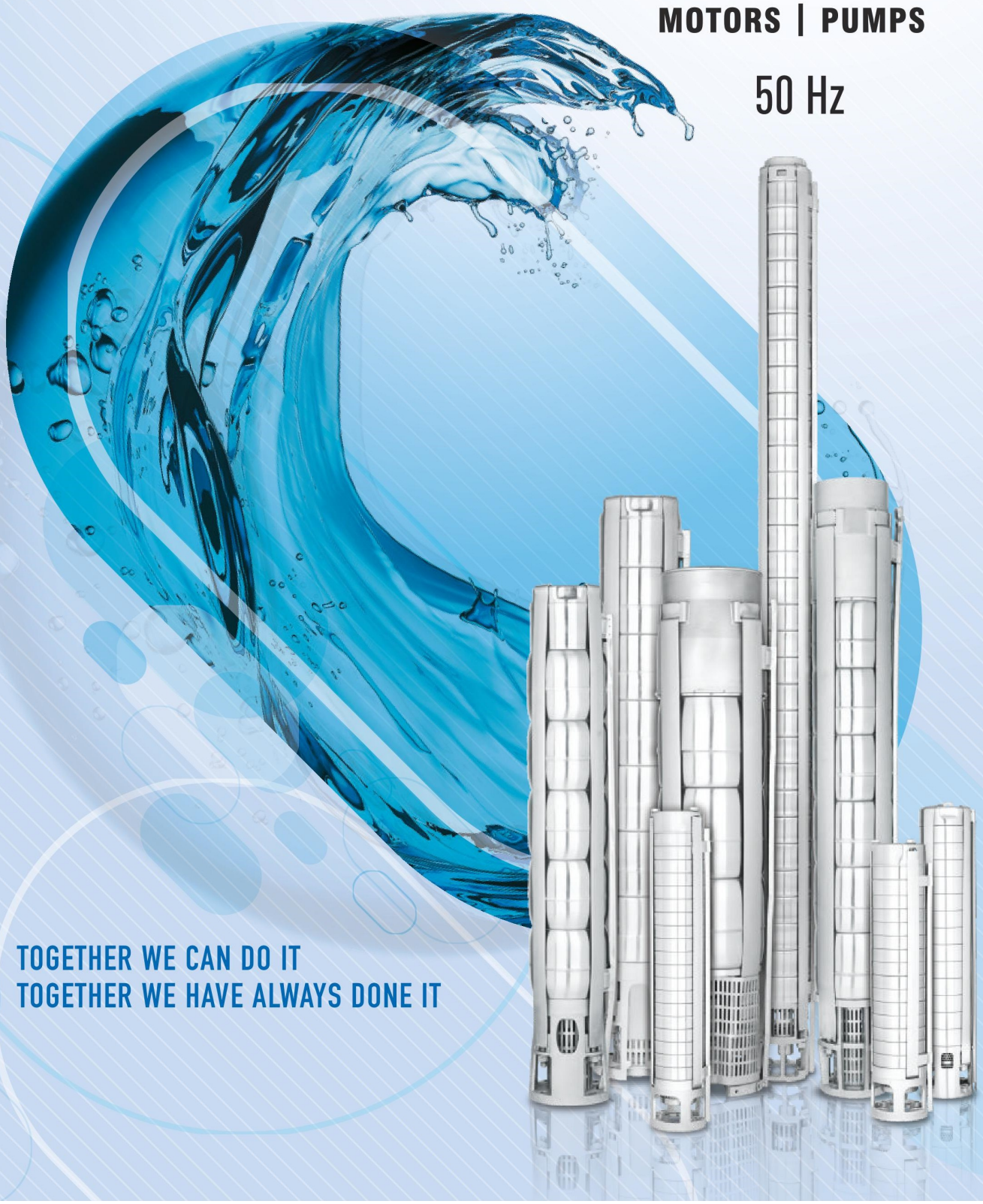
Since 1969

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.

Index

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 v = max 1 mm2/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.
- Effciency curve: p% show pump stage efficiency.

Performance Range

Stainless steel submersible bore well pumps

Model	Borewell Dia.	Discharge Range (m3/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	3"/4"
USP60	6"	0-79	0-323	3"/4"
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

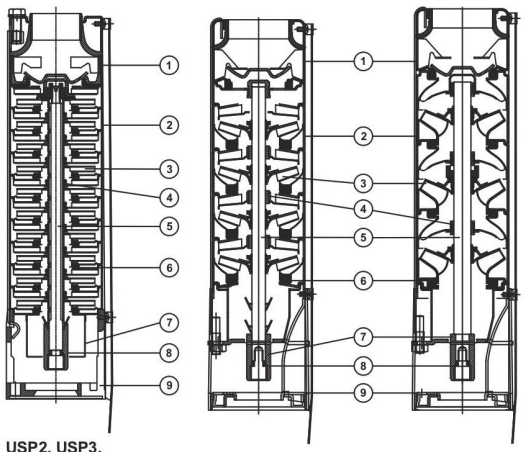
USP2, USP3 & USP5	USP8	USP14	USP12, 14A, 17	USP30
				

USP46 & USP60	USP77 & USP95	USP125 & USP160	USP215
			

Construction
Stainless steel submersible bore well pumps

Sectional drawing & Materials

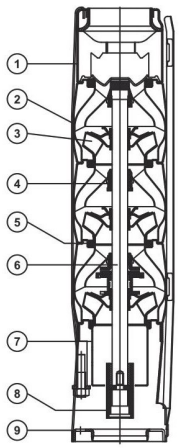
4" Stainless steel submersible bore well pumps



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

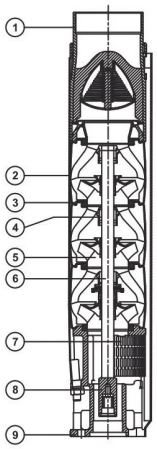
6" Stainless steel submersible bore well pumps



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

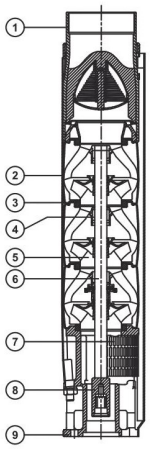
8" Stainless steel submersible bore well pumps



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 haft	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

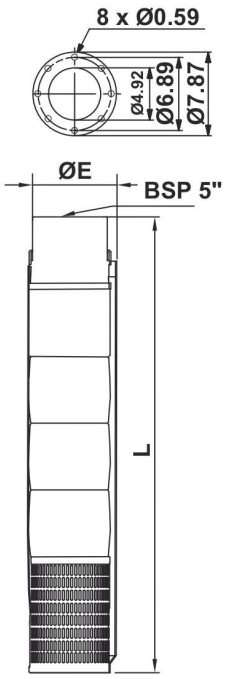
Pos.	Component	Material
01	Delivery casing	Stainless steel AISI 304 / Cf8
02	Diffuser	Stainless steel AISI 304
03	Neck ring	NBR
04	Bearing	NBR
05	Impeller	Stainless steel AISI 304
06	Pump shaft	Stainless steel AISI 431
07	Strainer	Stainless steel AISI 304
08	Coupling	Stainless steel AISI 304
09	Suction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

Technical Data
Stainless Steel Pumps

8" USP77

Performance Table

Model Name	kW	HP	Stage	Q	n = 2900 rpm					
				m^3/h	0	20	40	60	80	100
				L/min	0	333	667	1000	1334	1667
USP77/1	5.50	7.50	1		22	20	17	14	12	7
USP77/2-B	5.50	7.50	2		33	31	27	22	17	7
USP77/2	7.50	10.0	2		41	39	33	28	23	14
USP77/3-B	9.30	12.5	3		53	51	44	37	28	15
USP77/3	11.0	15.0	3		61	58	50	42	34	20
USP77/4-B	13.0	17.5	4	H	73	70	61	52	40	21
USP77/4	15.0	20.0	4	mts.	81	78	68	57	46	27
USP77/5	18.5	25.0	5		101	97	85	72	58	34
USP77/6	22.0	30.0	6		120	116	102	86	69	41
USP77/7	26.0	35.0	7		140	136	119	101	81	48
USP77/8-B	26.0	35.0	8		152	147	129	108	84	48
USP77/8	30.0	40.0	8		160	156	137	116	93	55



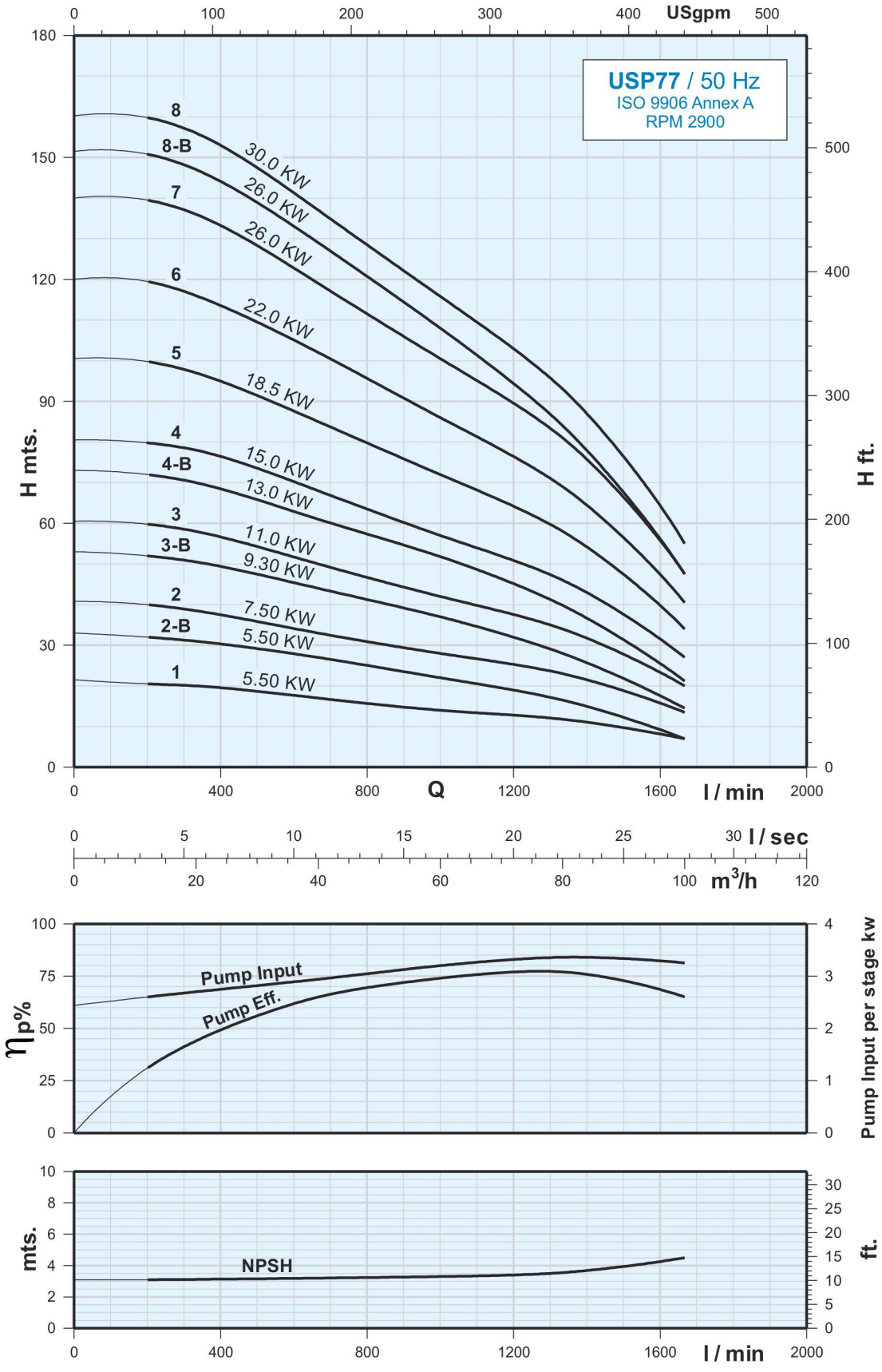
Dimensions & Weights

Model Name	Motor Joining Size	ØE (mm)	L (mm)	Pump Gross Weight (kg)	Pump Gross Volume (m^3)
USP77/1	6"	178	748	25.8	0.0299
USP77/2-B	6"	178	876	29.9	0.0350
USP77/2	6"	178	876	29.9	0.0350
USP77/3-B	6"	178	1004	34.0	0.0402
USP77/3	6"	178	1004	34.0	0.0402
USP77/4-B	6"	178	1132	38.1	0.0453
USP77/4	6"	178	1132	38.1	0.0453
USP77/5	6"	178	1260	42.2	0.0504
USP77/6	6"	178	1388	46.2	0.0555
USP77/7	6"	178	1516	50.3	0.0606
USP77/8-B	6"	178	1659	54.5	0.0664
USP77/8	6"	178	1644	54.4	0.0658

Technical Data
Stainless Steel Pumps

8" USP77

Performance Curve

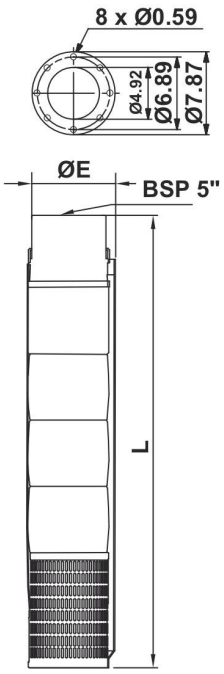


Technical Data
Stainless Steel Pumps

8" USP77

Performance Table

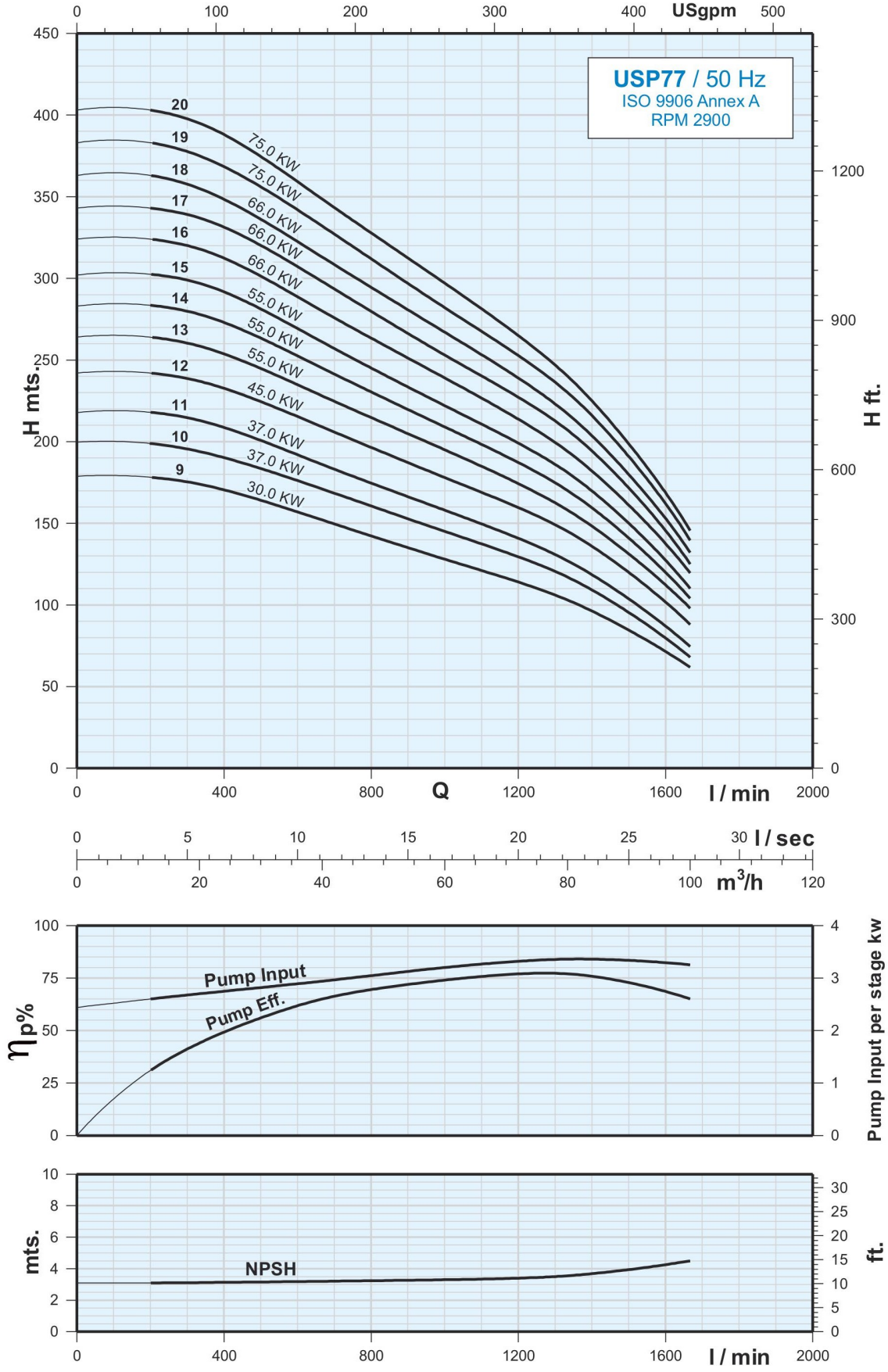
Model Name	kW	HP	Stage	Q	n = 2900 rpm					
				m^3/h	0	20	40	60	80	100
				L/min	0	333	667	1000	1334	1667
USP77/9	30.0	40.0	9		179	174	152	128	103	62
USP77/10	37.0	50.0	10		200	194	171	145	117	68
USP77/11	37.0	50.0	11		218	213	186	158	127	75
USP77/12	45.0	60.0	12		242	237	209	178	145	88
USP77/13	55.0	75.0	13		264	259	228	195	158	98
USP77/14	55.0	75.0	14	H	283	278	245	209	170	104
USP77/15	55.0	75.0	15	mts.	302	297	261	222	181	110
USP77/16	66.0	90.0	16		324	318	280	239	194	120
USP77/17	66.0	90.0	17		343	337	298	253	207	125
USP77/18	66.0	90.0	18		363	355	313	267	217	132
USP77/19	75.0	100.0	19		383	375	332	282	230	140
USP77/20	75.0	100.0	20		403	395	349	297	240	146



Dimensions & Weights

Model Name	Motor Joining Size	ØE (mm)	L (mm)	Pump Gross Weight (kg)	Pump Gross Volume (m^3)
USP77/9	6"	178	1787	58.6	0.0803
USP77/10	6"	178	1915	62.6	0.0861
USP77/11	6"	178	2043	66.7	0.0918
USP77/12	8"	200	2171	70.8	0.0976
USP77/13	8"	200	2299	74.9	0.1033
USP77/14	8"	200	2427	79.0	0.1091
USP77/15	8"	200	2555	83.1	0.1148
USP77/16	8"	200	2683	87.1	0.1206
USP77/17	8"	200	2811	91.2	0.1263
USP77/18	8"	200	2939	95.3	0.1321
USP77/19	8"	200	3067	99.4	0.1378
USP77/20	8"	200	3195	103.5	0.1436

Performance Curve

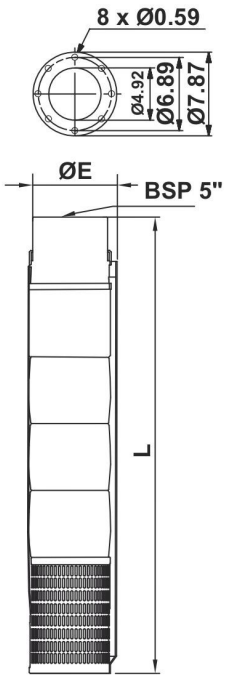


Technical Data
Stainless Steel Pumps

8" USP95

Performance Table

Model Name	kW	HP	Stage	Q	n = 2900 rpm					
				m^3/h	0	20	40	70	90	123.8
				L/min	0	333	667	1167	1500	2063
USP95/1	5.50	7.50	1	H mts.	23	21	18	14	13	6
USP95/2-BB	5.50	7.50	2		27	26	23	19	14	-
USP95/2-A	7.50	10.0	2		39	36	32	26	22	8
USP95/2	9.30	12.5	2		44	41	36	29	25	11
USP95/3-BB	9.30	12.5	3		49	46	40	32	25	7
USP95/3-B	11.0	15.0	3		56	53	47	38	31	11
USP95/3	13.0	17.5	3		65	62	55	44	38	18
USP95/4-B	15.0	20.0	4		77	74	65	53	44	18
USP95/4	18.5	25.0	4		86	82	72	59	51	24
USP95/5-AB	18.5	25.0	5		94	89	80	65	54	21
USP95/5	22.0	30.0	5		106	102	90	74	63	31
USP95/6	26.0	35.0	6		129	123	110	90	77	36
USP95/7	30.0	40.0	7		148	142	128	103	87	40



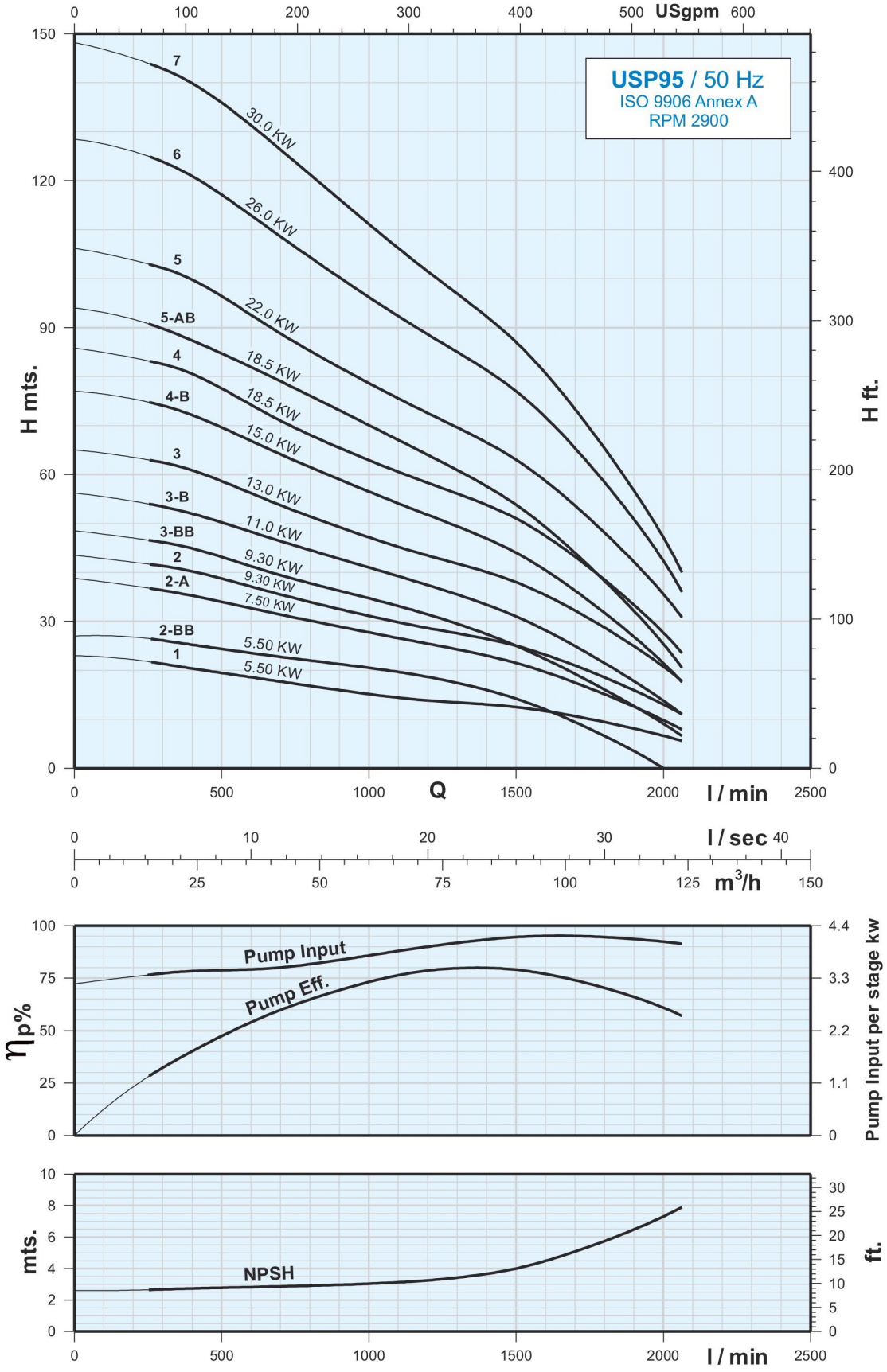
Dimensions & Weights

Model Name	Motor Joining Size	ØE (mm)	L (mm)	Pump Gross Weight (kg)	Pump Gross Volume (m^3)
USP95/1	6"	178	748	25.8	0.0299
USP95/2-BB	6"	178	876	29.9	0.0350
USP95/2-A	6"	178	876	29.9	0.0350
USP95/2	6"	178	876	29.9	0.0350
USP95/3-BB	6"	178	1004	34.0	0.0402
USP95/3-B	6"	178	1004	34.0	0.0402
USP95/3	6"	178	1004	34.0	0.0402
USP95/4-B	6"	178	1132	38.1	0.0453
USP95/4	6"	178	1132	38.1	0.0453
USP95/5-AB	6"	178	1260	42.2	0.0504
USP95/5	6"	178	1260	42.2	0.0504
USP95/6	6"	178	1388	46.2	0.0555
USP95/7	6"	178	1516	50.3	0.0606

Technical Data
Stainless Steel Pumps

8" USP95

Performance Curve

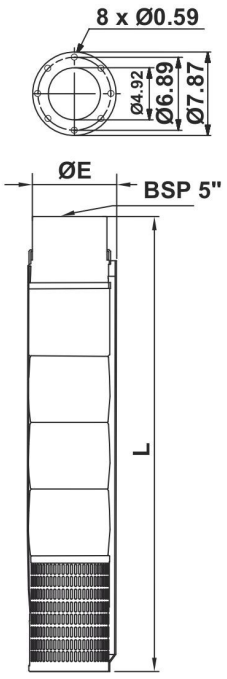


Technical Data
Stainless Steel Pumps

8" USP95

Performance Table

Model Name	kW	HP	Stage	Q	n = 2900 rpm					
				m^3/h	0	20	40	70	90	123.8
				L/min	0	333	667	1167	1500	2063
USP95/8	37.0	50.0	8	H mts.	170	163	145	119	102	48
USP95/9	37.0	50.0	9		189	182	162	133	114	52
USP95/10	45.0	60.0	10		214	206	185	153	132	63
USP95/11	55.0	75.0	11		237	228	205	169	146	70
USP95/12	55.0	75.0	12		258	248	222	183	157	76
USP95/13	55.0	75.0	13		278	267	239	198	170	81
USP95/14	66.0	90.0	14		300	288	259	214	185	89
USP95/15	75.0	100.0	15		322	310	278	230	198	95
USP95/16	75.0	100.0	16		342	330	296	244	210	100
USP95/17	75.0	100.0	17		363	349	313	258	223	106
USP95/18	93.0	125.0	18		383	369	330	273	235	111
USP95/19	93.0	125.0	19		403	387	348	287	247	116
USP95/20	93.0	125.0	20		423	407	365	300	258	122



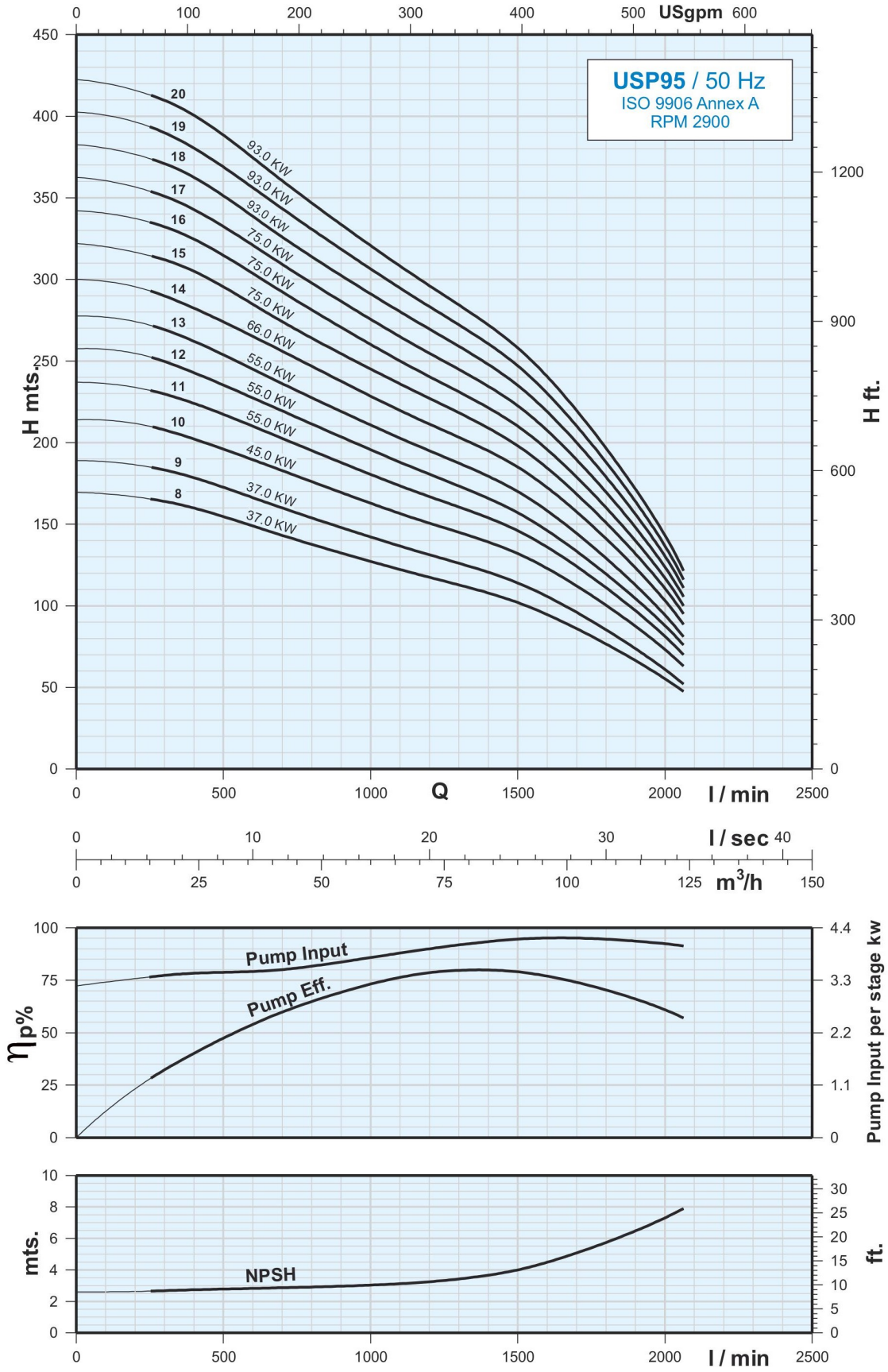
Dimensions & Weights

Model Name	Motor Joining Size	ØE (mm)	L (mm)	Pump Gross Weight (kg)	Pump Gross Volume (m^3)
USP95/8	6"	178	1644	54.4	0.0658
USP95/9	6"	178	1787	58.6	0.0803
USP95/8	8"	200	1659	54.5	0.0664
USP95/9	8"	200	1787	58.6	0.0803
USP95/10	8"	200	1915	62.6	0.0861
USP95/11	8"	200	2043	66.7	0.0918
USP95/12	8"	200	2171	70.8	0.0976
USP95/13	8"	200	2299	74.9	0.1033
USP95/14	8"	200	2427	79.0	0.1091
USP95/15	8"	200	2555	83.1	0.1148
USP95/16	8"	200	2683	87.1	0.1206
USP95/17	8"	200	2811	91.2	0.1263
USP95/18	8"	200	2939	95.3	0.1321
USP95/19	8"	200	3067	99.4	0.1378
USP95/20	8"	200	3195	103.5	0.1436

Technical Data
Stainless Steel Pumps

8" USP95

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.

Since 1969

Unnati®

MOTORS | PUMPS

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