6" - 7" - 8" - 9" - 10"

Döküm Dalgıç Pompa

Cast Iron Submersible Pumps

60 Hz Ürün Kataloğu

Product Catalogue

hayat olan her yerde...

everywhere, the life exists...

Ferat

WATER TECHNOLOGIES

hayat olan her yerde...

everywhere, the life exists...

www.**ferat**.com.tr

Ferat®

WATER TECHNOLOGIES

EN ISO **9001** CE TSE TS 11146 POMSAD Europump Member of Europump

hayat olan her yerde...

everywhere, the life exists...

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FIRAT MOTOR VE POMPA ELK. SAN. TİC. A.Ş.

firma profili

1990 yılında tamir ve satış amaçlı olarak **FIRAT MOTOR VE POMPA** ismi ile dalgıç pompa sektöründe çalışmalar yapmaya başlayan kuruluşumuz, 1994 yılı itibariyle dalgıç pompa üretimine başlamıştır. 2005 yılında ise 6.000 m^2 'si kapalı alan olmak üzere toplam 7.500 m^2 'lik alanda kurduğu fabrikası ile dalgıç pompa ve dalgıç motor seri üretimine geçmiştir.

''FERAT'' markasıyla kurumsal kimliğine kavuşan firmamız, 2 m^3/h den 400 m^3/h kadar değişen kapasite değerlerine sahip döküm ve paslanmaz dalgıç pompaları üretiminin yanı sıra 5" ten 12" e kadar (3 KW dan 380 KW kadar) dalgıç motorları üretimine başlamıştır.

2014 Yılı itibariyle 15.000 m^2 kapalı alan olmak üzere toplamda 26.373 m^2'lik alanda üretimine devam etmektedir.

Kuruluşundan bu yana sürekli büyümeyi ve müşteri memnuniyetini hedefleyen kuruluşumuz gelişen teknolojiye ayak uydurmaktadır. Üretim standartlarını yükselten firmamız, üretimin tüm aşamalarında modern makineleri kullanmakta müşterilerine kaliteyi sunmanın haklı gururunu taşımaktadır.

Kalitesini ulusal ve uluslararası sertifikalarla kanıtlayan Ferat; dalgıç pompa ve motor imalatını, tecrübeli mühendisleri ve tüm personellerinin katılımlarıyla gerçekleştirmektedir.

Ferat; şehirlerde, endüstriyel alanlarda, tarım arazilerinde, turistik bölgelerde kısacası **"hayat olan her yerde..."** sloganıyla sektöründe lider olmayı hedefleyerek yurtiçi ve yurtdışı pazarlarında kalitesinden ödün vermeden yatırımlarına devam etmektedir.

company profile

Having started working in the sector of submersible pumps for the purpose of repair and sale under the name of **FIRAT MOTOR AND PUMP** in 1990, our company has started the production of sumbersible pumps by the year 1994. By 2005, we have started serial production of sumbersible pumps and motors in our factory located on an area of 7500 m^2 total of which 6000 m^2 is indoor space.

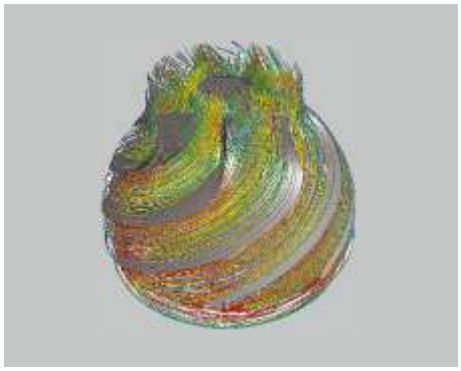
Our company, which has gained its corporate identity under the brand name **'' FERAT ''**, produces cast and stainless steel pumps with capacities ranging from 2 m^3/h to 400 m^3/h as well as sumbersible motors varying from 5 inches to 12 inches (from 3 kW to 380 kW) started production.

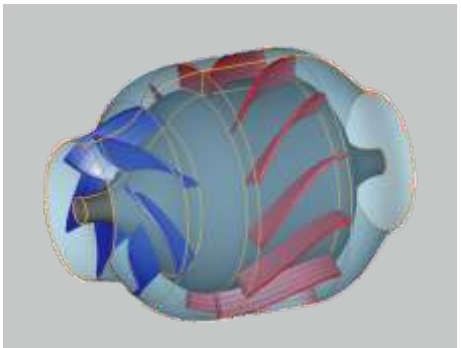
As of 2014, it has been continuing its production in a total area of 26.373 m^2 including 15.000 m^2 closed area.

Since its inception, our company, which aims at continuous growth and customer satisfaction, keeps pace with the developing technology. Having upgraded the standards of production, our company applies the use of modern machines in every phase of production and is proud of serving its customers the best quality products.

Ferat proves its quality with national and international certificates and manufactures submersible pumps and motors with its experienced engineers and all its staff.

Ferat; in the cities, industrial zones, agricultural areas, touristic places, shortly **" everywhere, the life exists... "** by the slogan of, Ferat has aimed the leading at sector and continues its investments in order to keep up its quality in domestic and export markets.



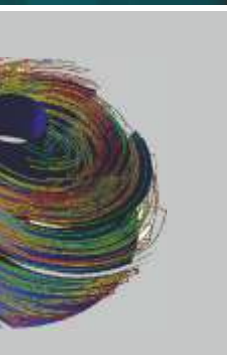


Ferat®
WATER TECHNOLOGIES

6" - 7" - 8" - 9" - 10"

Döküm Dalgıç Pompa
Cast Iron Submersible Pumps

60 Hz **Ürün Kataloğu**
Product Catalogue



DÖKÜM DALGIÇ POMPA

Ferat döküm pompa serisi, Ferat mühendisleri tarafından Hesaplamalı Akışkanlar Dinamiği (HAD) yöntemleri kullanılarak tasarlanmıştır. Modern tasarımı ile yüksek verimlilik ve düşük enerji tüketiminin yanında kullandığı kaliteli malzemelerle pompaların uzun ömürlü ve yüksek dayanıklılığa sahip olmasını sağlar. Firmamızda, geniş ürün yelpazesi içinde;

- **6", 7", 8", 9"** ve **10"** tiplerinde,
- **0 - 300 m³/h** kapasite aralığında,
- **50 Hz (2900 d/dk)** ve **60 Hz (3450 d/dk)** frekans ve devirlerinde.
- **600 m** maksimum basma yüksekliğinde çalışan temiz su pompalarının üretimi yapılmaktadır.

Sevk öncesi tüm pompalarımız; Standartların tanımlarına göre gerekli testlere tabi tutulmuşlardır.

Ürünlerimizde, "**Üstün Teknoloji ve Düşük Enerji Tüketimine**" önem verilmektedir.

ÇALIŞMA KOŞULLARI

- Temiz ve aşındırıcı olmayan sıvılar
- Maksimum su sıcaklığı 40 °C (Opsiyonel su sıcaklığı 70 °C)
- Maksimum kum miktarı 50 g/m³ olan sıvılar

KULLANIM ALANLARI

- İçme suyu temini ve dağıtımı
- Su arıtma tesisleri
- Şehir şebekeleri
- Bahçe ve tarım arazilerinin sulanması
- Endüstriyel uygulamalarda
- Jeotermal kuyularda
- Maden ve kömür ocaklarında su tahliyesinde
- Havuz ve fıskiye uygulamalarında
- Basınç arttırma
- Sera ve fidanlıklarda
- Gıda endüstrisinde

AVANTAJLARI

- Geniş ürün yelpazesi
- Yüksek verim
- Düşük enerji tüketimi
- Geliştirilmiş hidrolik tasarım
- Uzun ömür
- Yüksek dayanıklılık
- Ekonomik ilk yatırım maliyeti
- Yedek parçada hızlı temin
- Kolay montaj ve servis imkânı
- Aşınmaya karşı dayanıklılık
- Sessizlik
- Dökme demir, bronz ve paslanmaz çelikten imalat
- Su ile yağlamalı yataklar
- Suyun geri kaçmasını önleyen çekvalf
- **TS 11146** ve **NEMA MG1** standartlarında motor bağlantısı

CAST IRON SUBMERSIBLE PUMP

Ferat cast iron pump series are designed by Ferat engineers using Computational Fluid Dynamics (CFD) methods. With its modern design, high efficiency and low energy consumption, as well as high quality materials, it ensures the pumps to have long life and high durability. In our company, within wide range of products;

- **6", 7", 8", 9"** and **10"** types,
- From **0 - 300 m³/h** capacity range,
- At **50 Hz (2900 rpm)** and **60 Hz (3450 rpm)** frequencies and speeds,
- The production of clean water pumps operating at a maximum head of **600 m** is made.

All pumps before shipment; they were subjected to the necessary tests according to the definitions of the standards.

In the products; **"Superior Technology and Low Energy Consumption"** are given importance.

WORKING CONDITIONS

- Clean and nonabrasive liquids
- Maximum water temperature 40 °C (Optional water temperature 70 °C)
- Liquids with a maximum sand amount of 50 g/m³

USAGE AREAS

- Municipal water supply and distribution
- Municipal water treatment
- Domestic water supply
- Irrigation in horticulture and agriculture
- Industrial applications
- Geothermal wells
- De-watering in mines and coal cookers
- Pools, fountains, etc.
- Pressure boosting
- Greenhouse and nurseries
- Food industry

ADVANTAGES

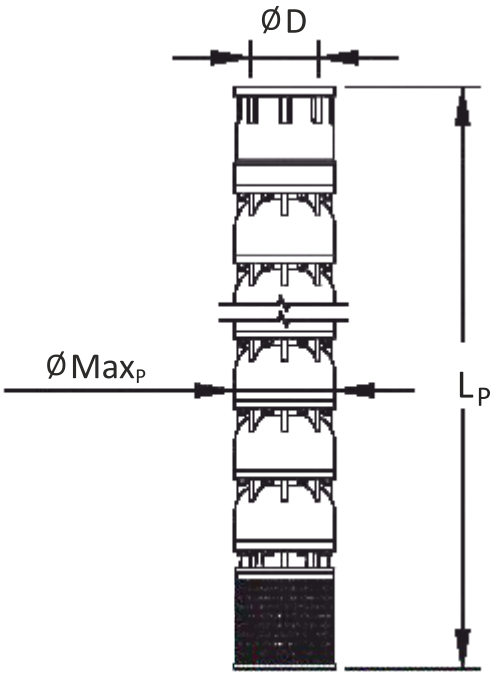
- Wide range of sizes
- High efficiency
- Low energy consumption
- State-of-the-art hydraulics design
- Long life
- High durability
- Economical initial investment cost
- Quick supply of spare parts
- Easy installation and service opportunities
- Wear-resistant design
- Silence
- Manufacture by cast iron, bronze and stainless steel
- Water lubricated bearing
- Check valve to prevent backflow of water
- Motor connection in **TS 11146** and **NEMA MG1** standards

ÜRÜNÜN TANIMLANMASI
PRODUCT TYPE KEY

F DP 8 4 20 / 08

- **Kademe Sayısı** / Stage Number
- **En Verimli Nokta (l/s)** / Best Efficiency Point (l/s)
- **Çıkış Çapı (Ø inç)** / Outlet Diameter (Ø inches)
- **Kuyu Çapı (Ø inç)** / Well Diameter (Ø inches)
- **Döküm Pompa** / Cast Iron Pump
- **Ferat Pompa** / Ferat Pump

Ürün Kodu / Product Code



Ölçüler / Dimensions

DÖKÜM POMPA SERİSİ
CAST IRON PUMP SERIES

6"	7"	8"	9"	10"
FDP 6310	FDP 7420	FDP 8420	FDP 9650	FDP 10655
FDP 6415	FDP 7540	FDP 8530		FDP 10865
FDP 6420		FDP 8535		FDP 10875
		FDP 8555		FDP 10885

KARIŞIK AKIŞLI POMPALAR
MIXED FLOW PUMPS

FDP 6310, FDP 6415, FDP 6420, FDP 7420, FDP 7540, FDP 8420, FDP 8530, FDP 8535, FDP 8555, FDP 9650, FDP 10655, FDP 10865, FDP 10875, FDP 10885

GRAFİKLERİN OKUNMASI
HOW TO READ THE CURVE CHARTS

Pompa Tipi
Pump Type

Çalışma Gerilimi ve Frekansı
Operating Voltage and Fequency

Çalışma Noktası
Performance Point

Pompalama Kapasitesi
Pumping Capacity

Q=87 m³/h

Basma Yüksekliği
Delivery Head

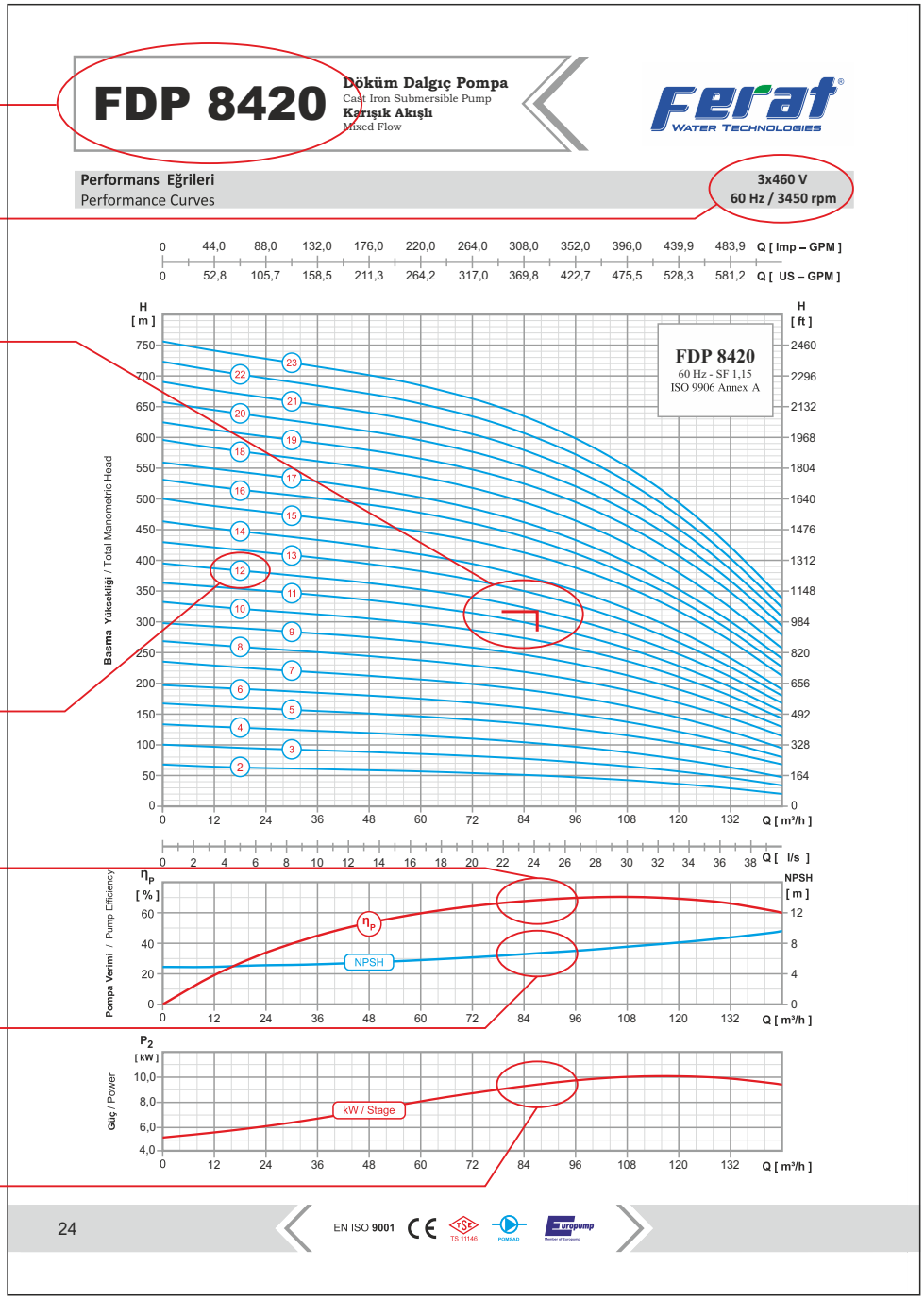
H=318 m

Kademe Sayısı
Number of Stage

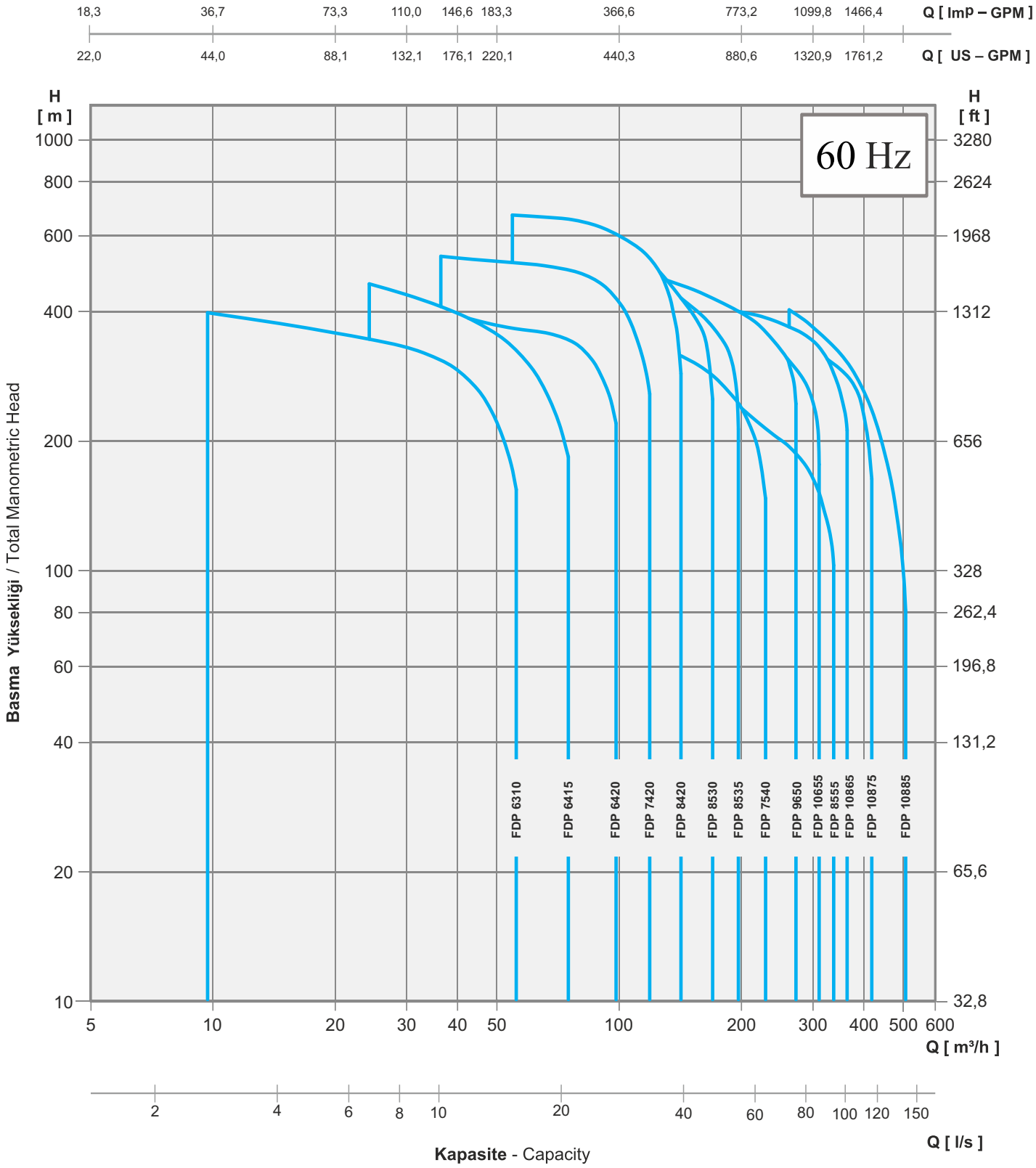
Pompa % Verimi
Pump Efficiency %

Gerekli Giriş Basıncı
Required Inlet Pressure

Kademe Başına Çekilen Güç
Power Consumption Per Stage



PERFORMANS ALANI
PERFORMANCE RANGE



Difüzör

Dökme demir, bronz ve paslanmaz çelik olarak imal edilebilen difüzörler, fandan gelen suyun üstteki fana geçmesini sağlayan ve fanlara yataklık eden parçadır.

Diffuser

Diffusers made of cast iron, bronze and stainless steel are the parts that allow the water coming from the impeller to pass to the upper impeller and that they are bearing to the impellers.

Stoper

Pompada ilk çalışma anında oluşan yukarı yönlü hareketin, fan grubuna zarar vermesini önleyen karbon alaşımlı parçadır.

Stop Ring

It is a carbon alloy part that occurs during the first operation of the pump and prevents the upward movement from damaging the impeller group.

Kum Kanallı Yataklar

Tüm yataklar su yağlamalı olup, kum taneciklerinin pompalanan su ile birlikte pompadan atılmalarına olanak verecek şekilde köşeli kesitlidirler.

Bearings with Sand Channels

All bearings are water-lubricated and have a squared shape enabling sand particles, if any, to leave the pump together with the pumped liquid.

Emiş Haznesi

Dökme demir, bronz ve paslanmaz çelikten tek parça olarak imal edilen emiş haznesi, üstün tasarımıyla pompalara daha dayanıklı ve daha güvenilir bir yapı kazandırmaktadır.

Suction Case

The suction case made of cast iron, bronze and stainless steel in one piece offers a more durable and reliable structure to the pumps with its superior design.

Çıkış Haznesi

Dökme demir, bronz ve paslanmaz çelikten tek parça olarak imal edilen çıkış haznesi, pompanın kolon grubuna güvenli ve sağlam bir şekilde bağlanmasını sağlar. Ayrıca içerisinde pompa durduğu zaman geri akış önleyici bir çek-valf bulunmaktadır.

Valve Casing

The valve casing is made of cast iron, bronze and stainless steel in one piece and provides a secure and sturdy connection of the pump to the column group. There is also a non-return check valve inside the pump when it stops.

Kaplin

Paslanmaz çelik olarak imal edilen kaplin, motorun mil gücünü pompa miline aktaran bağlama parçasıdır. NEMA standartlarına uygun bir şekilde üretimi yapılmaktadır.

Coupling

Coupling made of stainless steel is the coupling part which transfers the shaft power of the motor to the pump shaft. It is produced in accordance with NEMA standards

Süzgeç

Paslanmaz çelik olarak imal edilen süzgeç, iri parçaların pompaya girmesini önleyen, emiş haznesinin üzerine monte edilen emme donanımı parçasıdır.

Strainer

Stainless steel strainer is a piece of suctio equipment mounted on the suction chamber to prevent large parts from entering the pump.

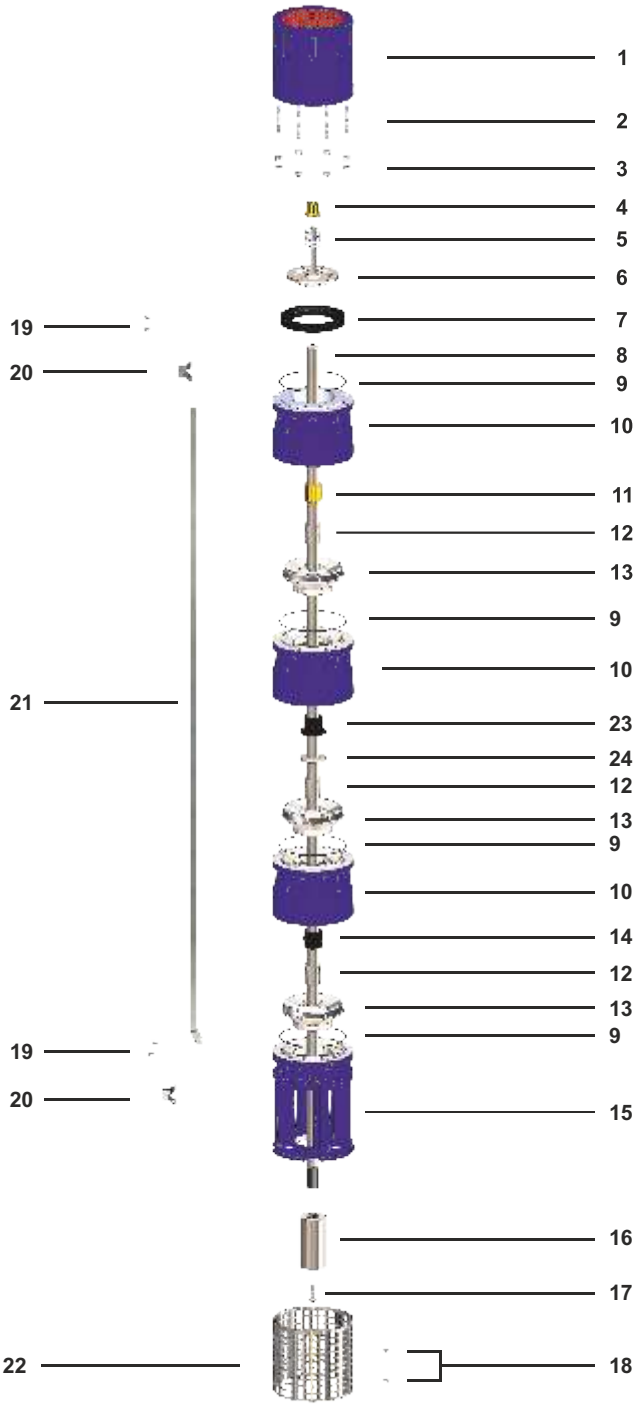
Fan

Dökme demir, bronz ve paslanmaz çelik olarak imal edilebilen fanlar, pompa milinden aldığı gücü akış enerjisine dönüştüren parçadır.

Impeller

Impellers made of cast iron, bronze and stainless steel are the parts that convert the power received from the pump shaft into flow energy.

DÖKÜM DALGIÇ POMPA
CAST IRON SUBMERSIBLE PUMP



DÖKÜM DALGIÇ POMPA
CAST IRON SUBMERSIBLE PUMP

	Parça Adı	Malzeme
1	Çıkış Haznesi	DÖKME DEMİR (GG20)
2	Saplama	AISI 304
3	Somun	AISI 304
4	Klepe Burcu	BRONZ ASTM B145 - 4A
5	Klepe Yayı	AISI 302
6	Klepe	DÖKME DEMİR (GG20)
7	Klepe Lastiği	KAUÇUK (NBR)
8	Mil	AISI 420
9	Difüzör Oringi	KAUÇUK (NBR)
10	Difüzör	DÖKME DEMİR (GG20)
11	Difüzör Yatağı	BRONZ ASTM B145 - 4A
12	Fan Tespit Burcu	AISI 420
13	Fan	DÖKME DEMİR (GG20)
14	Kum Kanallı Difüzör Yatağı	KAUÇUK (NBR)
15	Emiş Haznesi	DÖKME DEMİR (GG20)
16	Kaplin	AISI 420
17	Kaplin Civatası	AISI 304
18	Süzgeç Civatası	AISI 304
19	Kablo Muhafaza Civatası	AISI 304
20	Kablo Muhafaza Bağlantısı	AISI 304
21	Kablo Muhafaza Sacı	AISI 304
22	Süzgeç	AISI 304
23	Stoper	KAUÇUK (NBR)
24	Stoper Pulu	AISI 304

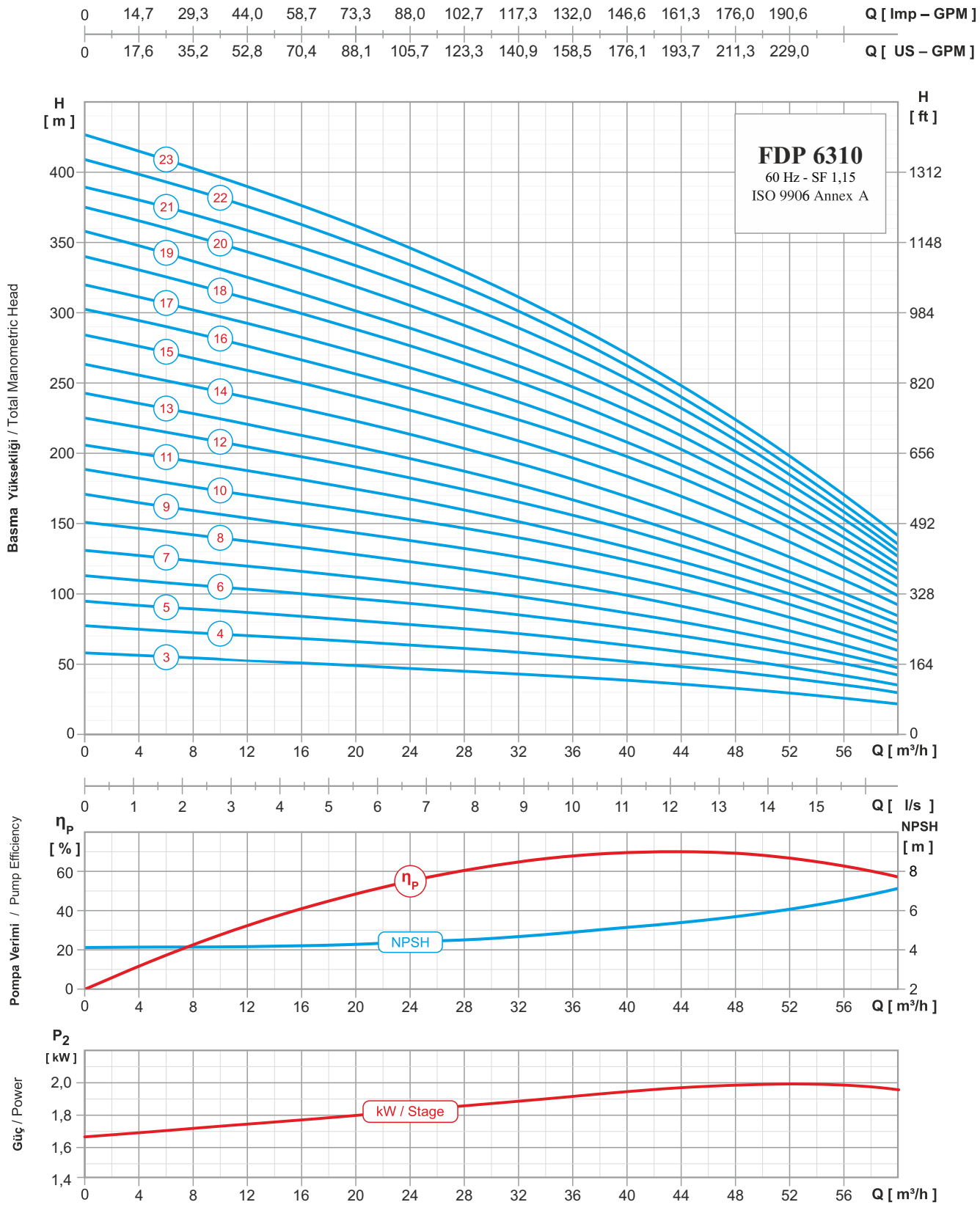
	Part Name	Material
1	Valve Casing	CAST IRON (GG20)
2	Stud	AISI 304
3	Nut	AISI 304
4	Valve Bushing	BRONZE ASTM B145 - 4A
5	Valve Spring	AISI 302
6	Valve	CAST IRON (GG20)
7	Valve Seat	RUBBER (NBR)
8	Shaft	AISI 420
9	Diffuser O-ring	RUBBER (NBR)
10	Diffuser	CAST IRON (GG20)
11	Diffuser Bearing	BRONZE ASTM B145 - 4A
12	Split Cone	AISI 420
13	Impeller	CAST IRON (GG20)
14	Diffuser Bearing with Sand Channels	RUBBER (NBR)
15	Suction Case	CAST IRON (GG20)
16	Coupling	AISI 420
17	Coupling Screw	AISI 304
18	Strainer Screw	AISI 304
19	Cable Guard Screw	AISI 304
20	Cable Guard Tie	AISI 304
21	Cable Guard	AISI 304
22	Strainer	AISI 304
23	Stop Ring	RUBBER (NBR)
24	Washer for Stop Ring	AISI 304

FDP 6310

Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow

Performans Eğrileri
Performance Curves

3x460 V
60 Hz / 3450 rpm



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Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow

FDP 6310

Teknik Veriler
Technical Data

3x460 V
60 Hz / 3450 rpm

Pompa Tipi Pump Type	Motor Tipi Motor Type	Motor Gücü Motor Power [S.F.=1,15]		Akım Current [460 V]	Maks. Pompa Çapı Max. Pump Dia	Çıkış Çapı Outlet Diameter	Pompa Boyu Pump Length	Pompa Ağırlığı Pump Weight	[Q] Kapasite - Capacity									
									[Imp - GPM]	0	35,6	71,1	106,7	124,6	142,2	160,2	177,8	195,8	213,4
									[US - GPM]	**0**	**42,7**	**85,4**	**128,1**	**149,7**	**170,8**	**192,4**	**213,5**	**235,1**	**256,2**
		P_N		I_N	**Ø** Max_P	**Ø D**	L_P	W_P	[l/s]	0	2,7	5,4	8,1	9,4	10,8	12,1	13,5	14,8	16,2
		[kW]	[HP]	[A]	[mm]	[inch]	[mm]	[kg]	**[m³/h]**	**0**	**9,7**	**19,4**	**29,1**	**34,0**	**38,8**	**43,7**	**48,5**	**53,4**	**58,2**
FDP 6310 / 03	FM6	7,5	10	17,2	**Ø 150**	**Rp 3 (3" İçten Pasolu 11 Diş)** Rp 3 (3" Inside Threaded 11 TPI)	657	32	**[H] Basma Yüksekliği** / Total Manometric Head [m]	58	54	49	44	42	39	36	32	28	24
FDP 6310 / 04	FM6	9,3	12,5	20,8			765	38		77	72	66	60	57	53	49	44	38	32
FDP 6310 / 05	FM6	11	15	25,0			874	44		95	88	82	74	70	65	59	53	46	38
FDP 6310 / 06	FM6	13	17,5	29,0			982	50		113	105	97	88	83	77	71	63	55	46
FDP 6310 / 07	FM6	15	20	32,1			1091	56		131	122	113	102	95	88	81	72	62	52
FDP 6310 / 08	FM6	18,5	25	40,6			1199	62		151	140	129	116	109	101	92	82	70	58
FDP 6310 / 09	FM6	18,5	25	40,6			1308	67		171	157	144	131	123	114	104	92	79	65
FDP 6310 / 10	FM6	22	30	47,1			1416	73		189	174	160	145	136	127	116	103	88	73
FDP 6310 / 11	FM6	22	30	47,1			1525	79		206	191	176	157	147	136	124	110	96	79
FDP 6310 / 12	FM6	26	35	55,7			1633	85		225	209	191	172	161	149	135	120	104	86
FDP 6310 / 13	FM6	26	35	55,7			1742	90		243	225	206	185	172	159	144	128	110	92
FDP 6310 / 14	FM6	30	40	64,4			1850	96		263	244	224	201	187	173	157	140	121	100
FDP 6310 / 15	FM6	30	40	64,4			1959	102		284	264	242	217	203	188	171	152	131	108
FDP 6310 / 16	FM7	37	50	77,4			2067	108		303	282	258	232	218	202	184	163	140	115
FDP 6310 / 17	FM7	37	50	77,4			2176	114		320	298	274	246	230	212	193	171	147	121
FDP 6310 / 18	FM7	37	50	77,4			2284	119		340	316	290	260	244	225	204	181	155	127
FDP 6310 / 19	FM7	37	50	77,4			2393	125		358	332	303	272	255	236	214	189	162	132
FDP 6310 / 20	FM7	45	60	94,1			2501	131		375	350	320	287	268	247	224	198	170	139
FDP 6310 / 21	FM7	45	60	94,1			2610	137		389	365	335	301	281	259	234	206	176	143
FDP 6310 / 22	FM7	45	60	94,1			2718	143		409	383	351	314	292	269	242	213	182	148
FDP 6310 / 23	FM7	45	60	94,1			2827	148		427	397	364	324	302	277	250	221	189	154

Dökme Demir Fan - Difüzör / Cast Iron Impeller - Diffuser

Performans Toleransları / Performance Tolerances : EN ISO 9906

Çalışma Koşulları
Working Conditions

Çalışma Gerilimi / Operating Voltage	: 3 x 230V - 380V - 460V (- %10 / +%10)
Frekans / Frequency	: 60 Hz
Maks. Su Sıcaklığı / Max. Water Temp.	: 40 °C
Maks. Kum Miktarı / Max. Sand Amount	: 50 g / m³
Dönüş Yönü / Rotation	: Saatin Tersi Yönünde / Counterclockwise
Dönüş Hızı / Rotational Speed	: 3450 rpm
Mil Çapı / Shaft Diameter	: Ø 22 mm
Mil Ucu / Shaft End	: NEMA Stadardına Uygun / According to NEMA Standard

Performans Parametreleri
Performance Parameters

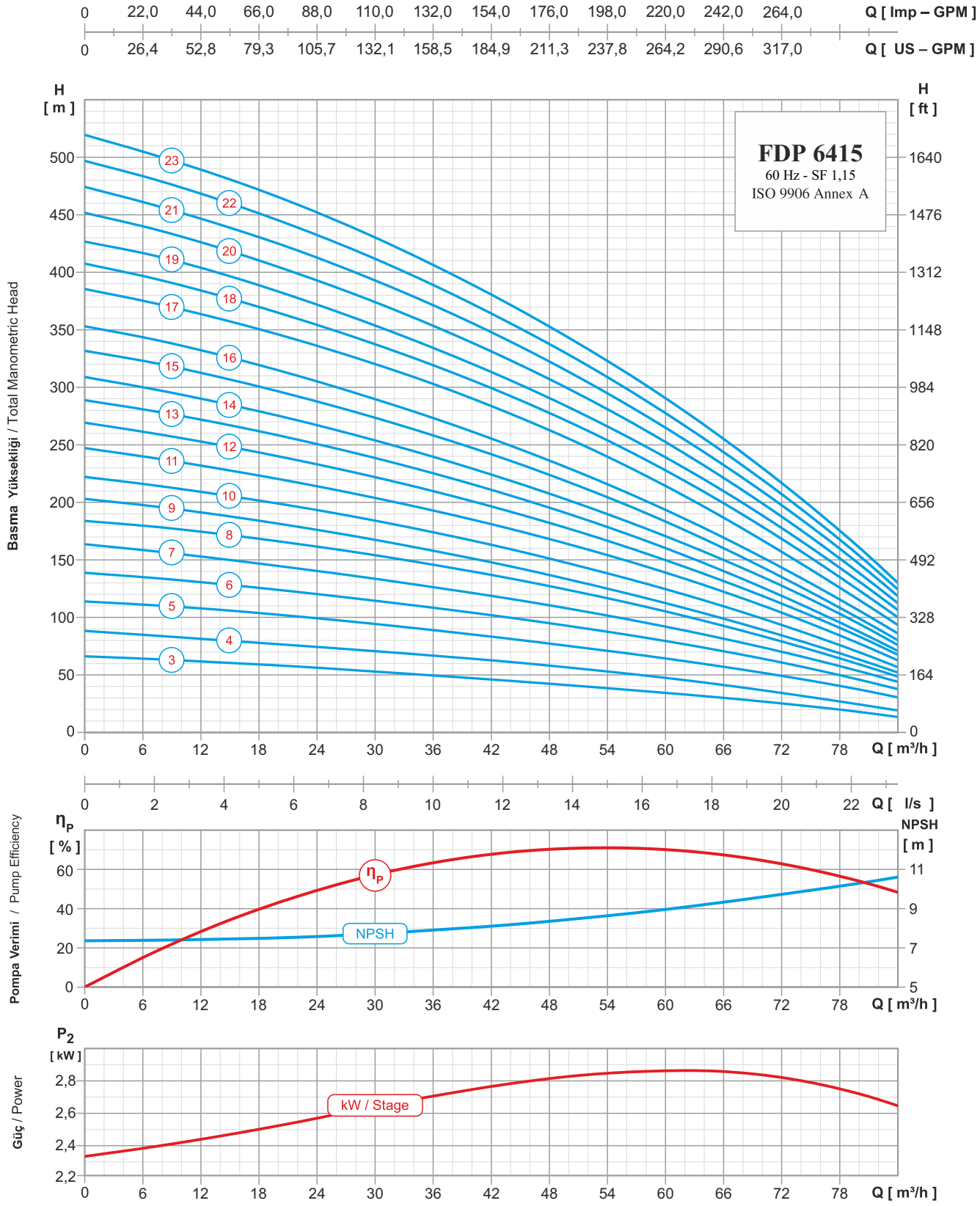
Atmosferik Basınç / Atmospheric Pressure	: 1 Bar
Su Sıcaklığı / Water Temp.	: 15 °C
Kinematik Viskozite / Kinematic Viscosity	: 1 mm² / s
Özgül Yoğunluk / Specific Density	: 1000 kg / m³
Servis Faktörü / Service Factor (S.F.)	: 1,15

FDP 6415

Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow

Performans Eğrileri
Performance Curves

3x460 V
60 Hz / 3450 rpm



EN ISO 9001 CE TSE TS 11146 POMSAD Europump Member of Europump

Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow

FDP 6415

Teknik Veriler
Technical Data

3x460 V
60 Hz / 3450 rpm

Pompa Tipi Pump Type	Motor Tipi Motor Type	Motor Gücü Motor Power [S.F.=1,15]		Akım Current [460 V]	Maks. Pompa Çapı Max. Pump Dia	Çıkış Çapı Outlet Diameter	Pompa Boyu Pump Length	Pompa Ağırlığı Pump Weight	[Q] Kapasite - Capacity									
									[Imp - GPM]	0	53,5	106,7	160,2	186,6	213,4	240,1	266,9	293,7	320,1
									[US - GPM]	**0**	**64,3**	**128,1**	**192,4**	**224,1**	**256,2**	**288,4**	**320,5**	**352,7**	**384,4**
		P_N		I_N	**Ø** Max_P	**Ø D**	L_P	W_P	[l/s]	0	4,1	8,1	12,1	14,1	16,2	18,2	20,2	22,3	24,3
		[kW]	[HP]	[A]	[mm]	[inch]	[mm]	[kg]	**[m³/h]**	**0**	**14,6**	**29,1**	**43,7**	**50,9**	**58,2**	**65,5**	**72,8**	**80,1**	**87,3**
FDP 6415 / 03	FM6	9,3	12,5	20,8			708	35		66	61	53	45	40	36	30	25	18	10
FDP 6415 / 04	FM6	13	17,5	29,0			833	42		88	80	71	62	56	49	42	33	24	15
FDP 6415 / 05	FM6	15	20	32,1			958	49		114	106	95	82	74	66	58	48	37	25
FDP 6415 / 06	FM6	18,5	25	40,6			1083	56		139	129	115	100	91	82	71	59	46	31
FDP 6415 / 07	FM6	22	30	47,1			1208	63		164	150	135	117	106	95	82	69	53	36
FDP 6415 / 08	FM6	26	35	55,7			1333	70		184	172	155	134	122	109	94	77	59	39
FDP 6415 / 09	FM6	26	35	55,7			1458	77		203	188	169	145	131	116	100	82	63	43
FDP 6415 / 10	FM6	30	40	64,4			1583	84		222	206	186	160	145	129	111	91	70	46
FDP 6415 / 11	FM7	37	50	77,4			1708	91		247	228	205	178	161	144	124	102	77	50
FDP 6415 / 12	FM7	37	50	77,4			1833	98		269	249	224	193	175	155	133	109	83	54
FDP 6415 / 13	FM7	37	50	77,4			1958	105		289	268	240	207	187	166	142	116	87	57
FDP 6415 / 14	FM7	45	60	94,1			2083	112		309	286	256	220	199	176	152	124	94	60
FDP 6415 / 15	FM7	45	60	94,1			2208	119		332	308	276	237	215	190	162	132	99	64
FDP 6415 / 16	FM7	45	60	94,1			2333	126		353	327	292	250	226	200	171	140	106	69
FDP 6415 / 17	FM7	55	75	115,0			2458	133		385	358	323	278	252	222	189	153	115	75
FDP 6415 / 18	FM7	55	75	115,0			2583	140		408	378	340	294	266	236	202	164	123	80
FDP 6415 / 19	FM7	55	75	115,0			2708	146		427	398	357	307	279	247	212	173	131	85
FDP 6415 / 20	FM7	55	75	115,0			2833	153		452	420	377	325	295	261	224	183	138	90
FDP 6415 / 21	FM7	63	85	131,7			2958	160		474	440	396	341	309	274	235	193	146	95
FDP 6415 / 22	FM7	63	85	131,7			3083	166		497	461	415	357	324	287	247	202	153	99
FDP 6415 / 23	FM7	63	85	131,7			3208	173		519	482	434	373	338	300	258	212	160	104
					Ø 152	**NPT 4 (4" İçten Pasolu 8 Diş)** NPT 4 (4" Inside Threaded 8 TPI)			**[H] Basma Yüksekliği** / Total Manometric Head [m]									

Dökme Demir Fan - Difüzör / Cast Iron Impeller - Diffuser

Performans Toleransları / Performance Tolerances : EN ISO 9906

Çalışma Koşulları
Working Conditions

Çalışma Gerilimi / Operating Voltage	: 3 x 230V - 380V - 460V (- %10 / +%10)
Frekans / Frequency	: 60 Hz
Maks. Su Sıcaklığı / Max. Water Temp.	: 40 °C
Maks. Kum Miktarı / Max. Sand Amount	: 50 g / m³
Dönüş Yönü / Rotation	: Saatin Tersi Yönünde / Counterclockwise
Dönüş Hızı / Rotational Speed	: 3450 rpm
Mil Çapı / Shaft Diameter	: Ø 22 mm
Mil Ucu / Shaft End	: NEMA Stadardına Uygun / According to NEMA Standard

Performans Parametreleri
Performance Parameters

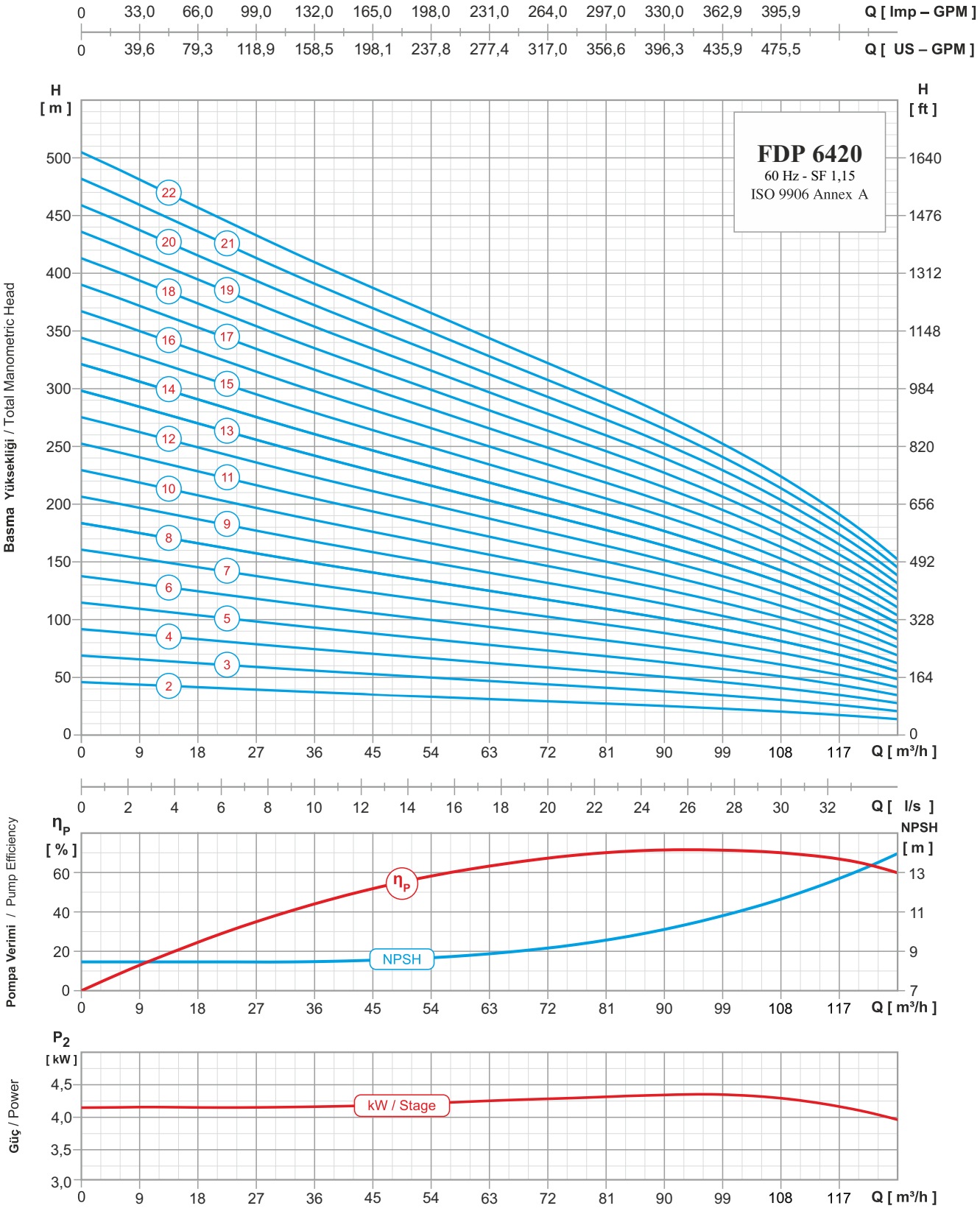
Atmosferik Basınç / Atmospheric Pressure	: 1 Bar
Su Sıcaklığı / Water Temp.	: 15 °C
Kinematik Viskozite / Kinematic Viscosity	: 1 mm² / s
Özgül Yoğunluk / Specific Density	: 1000 kg / m³
Servis Faktörü / Service Factor (S.F.)	: 1,15

FDP 6420

Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow

Performans Eğrileri
Performance Curves

3x460 V
60 Hz / 3450 rpm



EN ISO 9001

Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow

FDP 6420

Teknik Veriler
Technical Data

3x460 V
60 Hz / 3450 rpm

Pompa Tipi Pump Type	Motor Tipi Motor Type	Motor Gücü Motor Power [S.F.=1,15]		Akım Current [460 V]	Maks. Pompa Çapı Max. Pump Dia	Çıkış Çapı Outlet Diameter	Pompa Boyu Pump Length	Pompa Ağırlığı Pump Weight	[Q] Kapasite - Capacity									
									[Imp - GPM]	0	79,9	160,2	200,2	240,1	280,1	320,1	360,4	400,3	440,3
									[US - GPM]	**0**	**96,0**	**192,4**	**240,4**	**288,4**	**336,4**	**384,4**	**432,8**	**480,8**	**528,8**
		P_N		I_N	**Ø** Max_P	**Ø D**	L_P	W_P	[l/s]	0	6,1	12,1	15,2	18,2	21,2	24,3	27,3	30,3	33,4
		[kW]	[HP]	[A]	[mm]	[inch]	[mm]	[kg]	**[m³/h]**	**0**	**21,8**	**43,7**	**54,6**	**65,5**	**76,4**	**87,3**	**98,3**	**109,2**	**120,1**
FDP 6420 / 02	FM6	9,3	12,5	20,8	**Ø 157**	**NPT 4 (4" İçten Pasolu 8 Diş)** NPT 4 (4" Inside Threaded 8 TPI)	623	30	**[H] Basma Yüksekliği** / Total Manometric Head [m]	46	41	36	33	31	28	26	23	20	16
FDP 6420 / 03	FM6	15	20	32,1			768	37		69	61	53	50	46	42	39	35	30	24
FDP 6420 / 04	FM6	18,5	25	40,6			913	45		92	81	71	66	61	57	52	46	40	33
FDP 6420 / 05	FM6	22	30	47,1			1058	53		115	102	89	83	77	71	65	58	50	41
FDP 6420 / 06	FM6	26	35	55,7			1203	60		138	122	107	99	92	85	78	69	60	49
FDP 6420 / 07	FM6	30	40	64,4			1348	68		161	142	124	116	107	99	91	81	70	57
FDP 6420 / 08	FM7	37	50	77,4			1493	76		184	162	142	132	123	113	104	93	80	65
FDP 6420 / 09	FM7	37	50	77,4			1638	84		207	183	160	149	138	127	116	104	90	73
FDP 6420 / 10	FM7	45	60	94,1			1783	91		229	203	178	166	153	142	129	116	100	81
FDP 6420 / 11	FM7	45	60	94,1			1928	99		252	223	195	182	169	156	142	127	110	89
FDP 6420 / 12	FM7	55	75	115,0			2073	107		275	244	213	199	184	170	155	139	120	98
FDP 6420 / 13	FM7	55	75	115,0			2218	115		298	264	231	215	200	184	168	150	130	106
FDP 6420 / 14	FM7	63	85	131,7			2363	123		321	284	249	232	215	198	181	162	140	114
FDP 6420 / 15	FM7	63	85	131,7			2508	131		344	305	266	248	230	212	194	174	150	122
FDP 6420 / 16	FM7	63	85	131,7			2653	139		367	325	284	265	246	227	207	185	160	130
FDP 6420 / 17	FM8	75	100	145,0			2828	151		390	345	302	281	261	241	220	197	170	138
FDP 6420 / 18	FM8	75	100	145,0			2973	158		413	365	320	298	276	255	233	208	180	146
FDP 6420 / 19	FM8	81	110	157,0			3118	166		436	386	337	315	292	269	246	220	190	154
FDP 6420 / 20	FM8	81	110	157,0			3263	172		459	406	355	331	307	283	259	231	200	163
FDP 6420 / 21	FM8	92	125	179,0			3408	181		482	426	373	348	322	297	272	243	210	171
FDP 6420 / 22	FM8	92	125	179,0			3553	188		505	447	391	364	338	312	285	255	220	179

Dökme Demir Fan - Difüzör / Cast Iron Impeller - Diffuser

Performans Toleransları / Performance Tolerances : EN ISO 9906

Çalışma Koşulları
Working Conditions

Çalışma Gerilimi / Operating Voltage	: 3 x 230V - 380V - 460V (- %10 / +%10)
Frekans / Frequency	: 60 Hz
Maks. Su Sıcaklığı / Max. Water Temp.	: 40 °C
Maks. Kum Miktarı / Max. Sand Amount	: 50 g / m³
Dönüş Yönü / Rotation	: Saatin Tersi Yönünde / Counterclockwise
Dönüş Hızı / Rotational Speed	: 3450 rpm
Mil Çapı / Shaft Diameter	: Ø 25 mm
Mil Ucu / Shaft End	: NEMA Stadardına Uygun / According to NEMA Standard

Performans Parametreleri
Performance Parameters

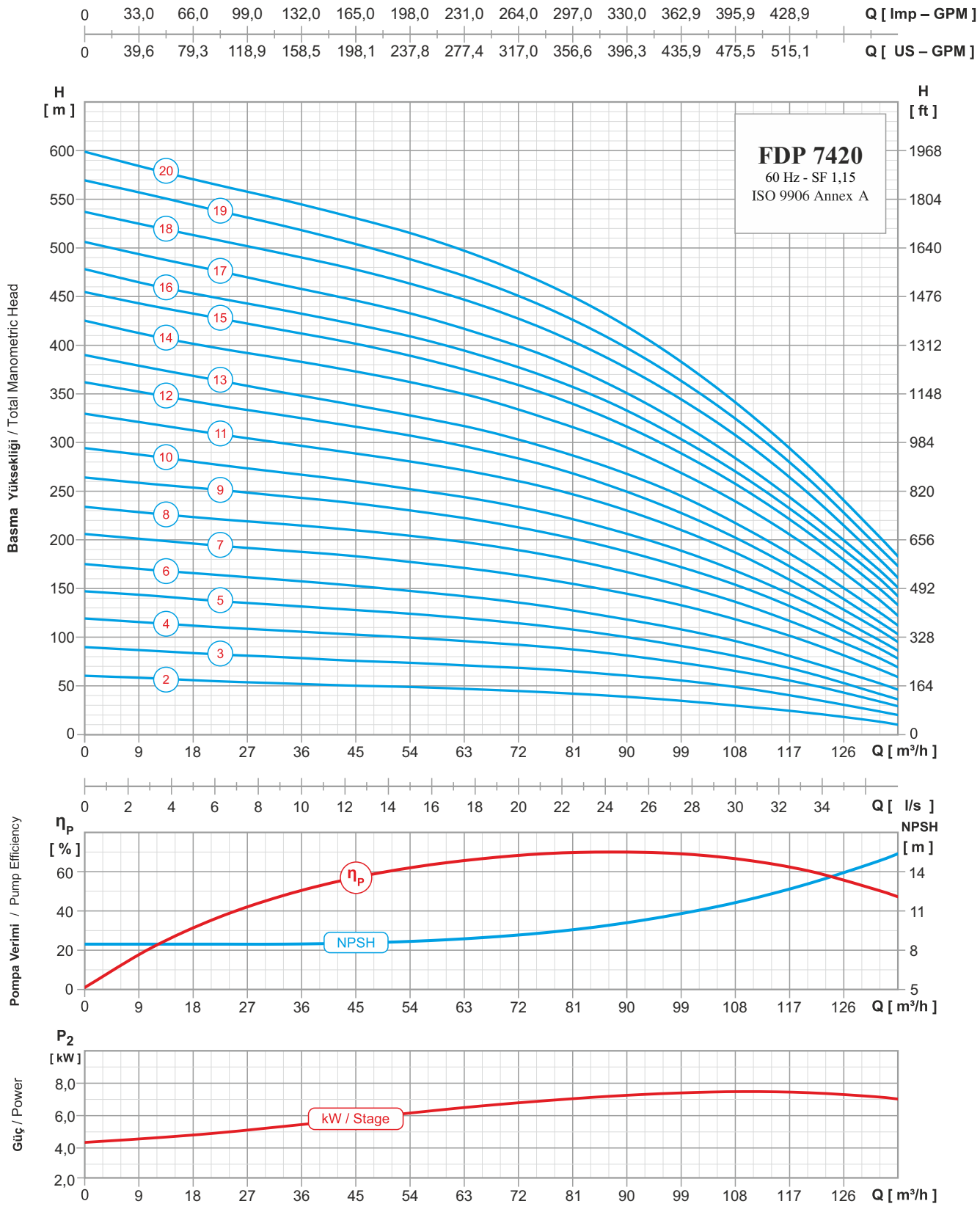
Atmosferik Basınç / Atmospheric Pressure	: 1 Bar
Su Sıcaklığı / Water Temp.	: 15 °C
Kinematik Viskozite / Kinematic Viscosity	: 1 mm² / s
Özgül Yoğunluk / Specific Density	: 1000 kg / m³
Servis Faktörü / Service Factor (S.F.)	: 1,15

FDP 7420

Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow

Performans Eğrileri
Performance Curves

3x460 V
60 Hz / 3450 rpm



EN ISO 9001

Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow

FDP 7420

Teknik Veriler
Technical Data

3x460 V
60 Hz / 3450 rpm

Pompa Tipi Pump Type	Motor Tipi Motor Type	Motor Gücü Motor Power [S.F.=1,15]		Akım Current [460 V]	Maks. Pompa Çapı Max. Pump Dia	Çıkış Çapı Outlet Diameter	Pompa Boyu Pump Length	Pompa Ağırlığı Pump Weight	[Q] Kapasite - Capacity									
									[Imp - GPM]	0	79,9	160,2	240,1	280,1	320,1	360,4	400,3	440,3	480,3
									[US - GPM]	**0**	**96,0**	**192,4**	**288,4**	**336,4**	**384,4**	**432,8**	**480,8**	**528,8**	**576,8**
		P_N		I_N	**Ø** Max_P	**Ø D**	L_P	W_P	[l/s]	0	6,1	12,1	18,2	21,2	24,3	27,3	30,3	33,4	36,4
		[kW]	[HP]	[A]	[mm]	[inch]	[mm]	[kg]	**[m³/h]**	**0**	**21,8**	**43,7**	**65,5**	**76,4**	**87,3**	**98,3**	**109,2**	**120,1**	**131,0**
FDP 7420 / 02	FM6	15	20	32,1	**Ø 178**	**NPT 4 (4" İçten Pasolu 8 Diş)** NPT 4 (4" Inside Threaded 8 TPI)	617	41	**[H] Basma Yüksekliği** / Total Manometric Head [m]	60	55	50	46	43	40	35	29	22	14
FDP 7420 / 03	FM6	22	30	47,1			743	51		90	82	76	70	67	62	56	48	37	25
FDP 7420 / 04	FM6	30	40	64,4			869	60		119	110	103	95	90	83	74	64	51	35
FDP 7420 / 05	FM7	37	50	77,4			995	70		147	137	128	118	111	102	92	79	63	43
FDP 7420 / 06	FM7	45	60	94,1			1121	79		175	164	153	140	132	121	109	94	75	54
FDP 7420 / 07	FM7	45	60	94,1			1247	89		206	194	184	169	159	148	134	116	95	69
FDP 7420 / 08	FM7	55	75	115,0			1373	98		234	221	211	196	185	171	154	134	109	81
FDP 7420 / 09	FM7	63	85	131,7			1499	108		264	252	238	220	207	192	173	151	124	91
FDP 7420 / 10	FM7	63	85	131,7			1625	117		294	277	261	241	228	211	190	165	135	100
FDP 7420 / 11	FM8	75	100	145,0			1794	133		330	309	290	269	254	235	212	184	149	110
FDP 7420 / 12	FM8	75	100	145,0			1920	142		362	338	318	293	277	255	230	199	162	119
FDP 7420 / 13	FM8	92	125	179,0			2046	152		390	364	340	313	295	274	247	213	174	129
FDP 7420 / 14	FM8	92	125	179,0			2172	161		425	397	375	346	325	302	271	235	193	143
FDP 7420 / 15	FM8	92	125	179,0			2298	171		455	428	403	371	350	324	291	253	207	154
FDP 7420 / 16	FM10	110	150	205,0			2424	180		478	449	423	390	368	341	306	266	218	165
FDP 7420 / 17	FM10	110	150	205,0			2550	190		506	477	448	412	389	359	323	279	229	174
FDP 7420 / 18	FM10	129	175	238,0			2676	199		537	508	480	442	416	385	347	302	248	185
FDP 7420 / 19	FM10	129	175	238,0			2802	209		569	539	506	466	439	406	366	319	263	197
FDP 7420 / 20	FM10	129	175	238,0			2928	219		599	565	533	491	463	429	386	335	277	209

Dökme Demir Fan - Difüzör / Cast Iron Impeller - Diffuser

Performans Toleransları / Performance Tolerances : EN ISO 9906

Çalışma Koşulları
Working Conditions

Çalışma Gerilimi / Operating Voltage	: 3 x 230V - 380V - 460V (- %10 / +%10)
Frekans / Frequency	: 60 Hz
Maks. Su Sıcaklığı / Max. Water Temp.	: 40 °C
Maks. Kum Miktarı / Max. Sand Amount	: 50 g / m³
Dönüş Yönü / Rotation	: Saatin Tersi Yönünde / Counterclockwise
Dönüş Hızı / Rotational Speed	: 3450 rpm
Mil Çapı / Shaft Diameter	: Ø 25 mm
Mil Ucu / Shaft End	: NEMA Stadardına Uygun / According to NEMA Standard

Performans Parametreleri
Performance Parameters

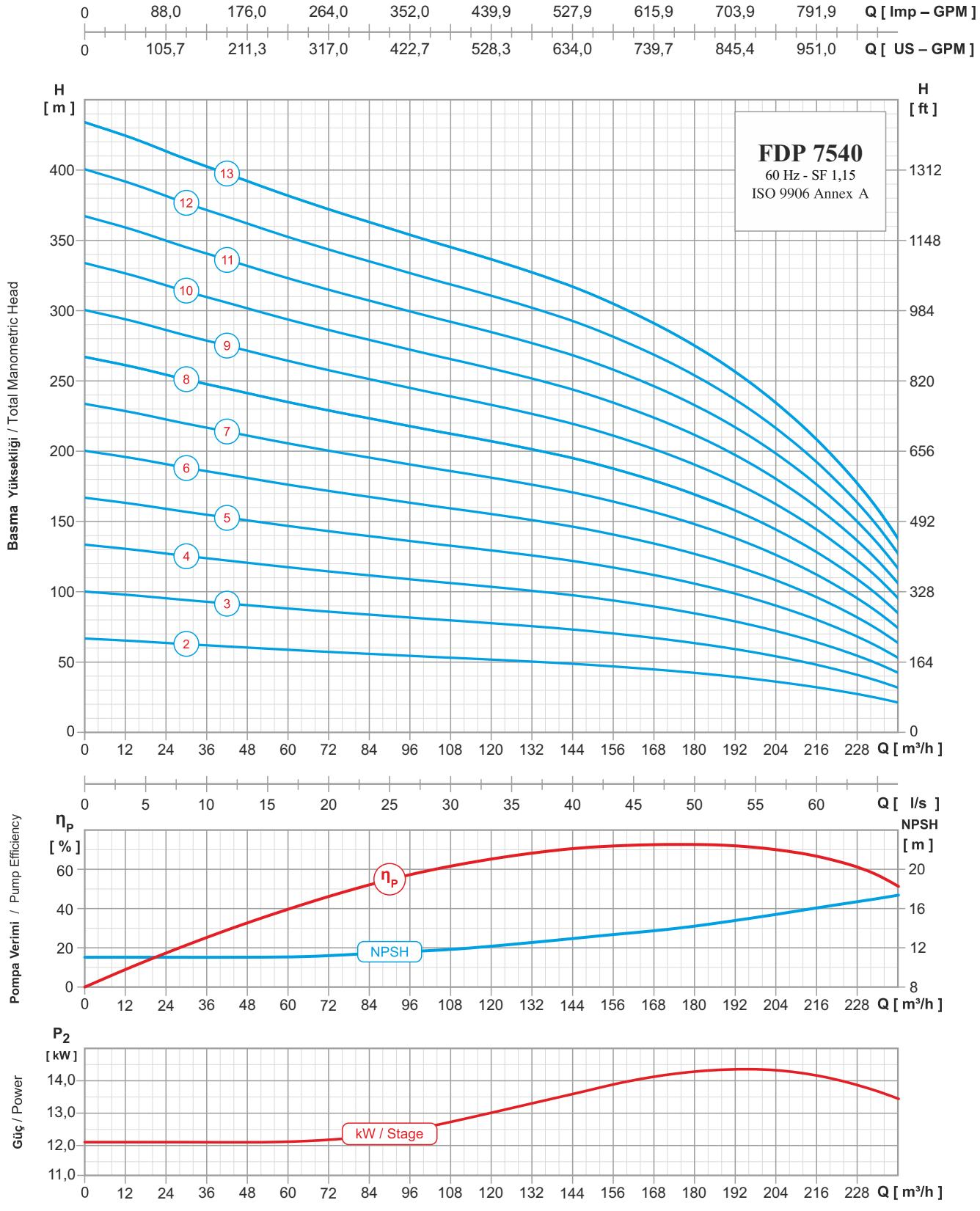
Atmosferik Basınç / Atmospheric Pressure	: 1 Bar
Su Sıcaklığı / Water Temp.	: 15 °C
Kinematik Viskozite / Kinematic Viscosity	: 1 mm² / s
Özgül Yoğunluk / Specific Density	: 1000 kg / m³
Servis Faktörü / Service Factor (S.F.)	: 1,15

FDP 7540

Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow

Performans Eğrileri
Performance Curves

3x460 V
60 Hz / 3450 rpm



EN ISO 9001 CE TS 11146 POMSAD Europump Member of Europump

Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow

FDP 7540

Teknik Veriler
Technical Data

3x460 V
60 Hz / 3450 rpm

Pompa Tipi Pump Type	**Motor Tipi** Motor Type	**Motor Gücü** Motor Power [S.F.=1,15]		**Akım** Current [460 V]	**Maks. Pompa Çapı** Max. Pump Dia	**Çıkış Çapı** Outlet Diameter	**Pompa Boyu** Pump Length	**Pompa Ağırlığı** Pump Weight	**[Q] Kapasite** - Capacity									
									[Imp - GPM]	0	160,2	320,1	480,3	533,8	587,0	640,5	693,6	747,2	800,3
									[US - GPM]	**0**	**192,4**	**384,4**	**576,8**	**641,1**	**704,9**	**769,2**	**833,0**	**897,3**	**961,1**
		P_N		I_N	**Ø** Max_P	**Ø D**	L_P	W_P	[l/s]	0	12,1	24,3	36,4	40,4	44,5	48,5	52,6	56,6	60,6
		[kW]	[HP]	[A]	[mm]	[inch]	[mm]	[kg]	**[m^3/h]**	**0**	**43,7**	**87,3**	**131,0**	**145,6**	**160,1**	**174,7**	**189,2**	**203,8**	**218,3**
FDP 7540 / 02	FM6	30	40	64,4	**Ø 187**	**NPT 5 (5" İçten Pasolu 8 Diş)** NPT 5 (5" Inside Threaded 8 TPI)	694	48	**[H] Basma Yüksekliği** Total Manometric Head [m]	67	61	55	50	49	46	43	40	36	31
FDP 7540 / 03	FM7	45	60	94,1			859	61		100	91	83	76	73	69	65	60	54	47
FDP 7540 / 04	FM7	55	75	115,0			1023	74		134	122	111	101	97	92	87	80	72	62
FDP 7540 / 05	FM8	75	100	145,0			1228	90		167	152	139	126	121	116	109	100	90	78
FDP 7540 / 06	FM8	81	110	157,0			1393	103		200	183	166	151	146	139	130	121	108	94
FDP 7540 / 07	FM8	92	125	179,0			1557	116		234	213	194	177	170	162	152	141	126	109
FDP 7540 / 08	FM10	110	150	205,0			1721	129		267	244	222	202	194	185	174	161	145	125
FDP 7540 / 09	FM10	129	175	238,0			1886	142		300	274	250	227	218	208	196	181	163	140
FDP 7540 / 10	FM10	147	175	238,0			2050	155		334	305	277	252	243	231	217	201	181	156
FDP 7540 / 11	FM10	147	200	277,0			2215	168		367	335	305	278	267	254	239	221	199	172
FDP 7540 / 12	FM10	166	225	309,0			2379	181		401	365	333	303	291	277	261	241	217	187
FDP 7540 / 13	FM10	185	250	349,0			2544	194		434	396	360	328	316	300	283	261	235	203

Dökme Demir Fan - Difüzör / Cast Iron Impeller - Diffuser

Performans Toleransları / Performance Tolerances : EN ISO 9906

Çalışma Koşulları
Working Conditions

Çalışma Gerilimi / Operating Voltage	: 3 x 230V - 380V - 460V (- %10 / +%10)
Frekans / Frequency	: 60 Hz
Maks. Su Sıcaklığı / Max. Water Temp.	: 40 °C
Maks. Kum Miktarı / Max. Sand Amount	: 50 g / m^3
Dönüş Yönü / Rotation	: Saatin Tersi Yönünde / Counterclockwise
Dönüş Hızı / Rotational Speed	: 3450 rpm
Mil Çapı / Shaft Diameter	: Ø 30 mm
Mil Ucu / Shaft End	: NEMA Stadardına Uygun / According to NEMA Standard

Performans Parametreleri
Performance Parameters

Atmosferik Basınç / Atmospheric Pressure	: 1 Bar
Su Sıcaklığı / Water Temp.	: 15 °C
Kinematik Viskozite / Kinematic Viscosity	: 1 mm^2 / s
Özgül Yoğunluk / Specific Density	: 1000 kg / m^3
Servis Faktörü / Service Factor (S.F.)	: 1,15

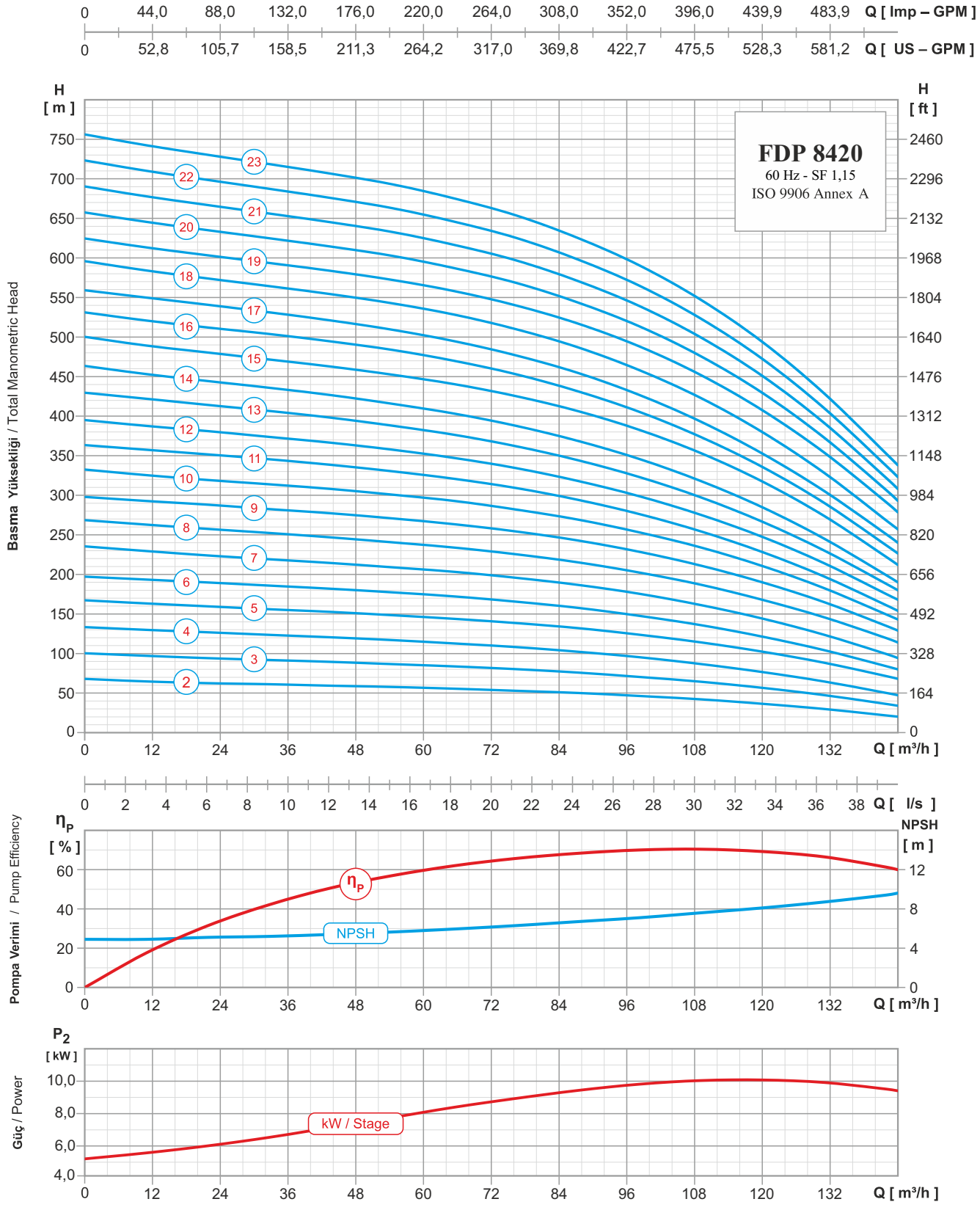
FDP 8420

Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow

Ferat WATER TECHNOLOGIES

Performans Eğrileri
Performance Curves

3x460 V
60 Hz / 3450 rpm



EN ISO 9001 CE TSE TS 11146 POMSAD Europump Member of Europump

Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow

FDP 8420

Teknik Veriler
Technical Data

3x460 V
60 Hz / 3450 rpm

Pompa Tipi Pump Type	Motor Tipi Motor Type	Motor Gücü Motor Power [S.F.=1,15]		Akım Current [460 V]	Maks. Pompa Çapı Max. Pump Dia	Çıkış Çapı Outlet Diameter	Pompa Boyu Pump Length	Pompa Ağırlığı Pump Weight	[Q] Kapasite - Capacity									
									[Imp - GPM]	0	79,9	160,2	240,1	280,1	320,1	360,4	400,3	440,3	480,3
									[US - GPM]	**0**	**96,0**	**192,4**	**288,4**	**336,4**	**384,4**	**432,8**	**480,8**	**528,8**	**576,8**
		P_N		I_N	**Ø** Max_P	**Ø D**	L_P	W_P	[l/s]	0	6,1	12,1	18,2	21,2	24,3	27,3	30,3	33,4	36,4
		[kW]	[HP]	[A]	[mm]	[inch]	[mm]	[kg]	**[m³/h]**	**0**	**21,8**	**43,7**	**65,5**	**76,4**	**87,3**	**98,3**	**109,2**	**120,1**	**131,0**
FDP 8420 / 02	FM6	22	30	47,1	**Ø 202**	**NPT 4 (4" İçten Pasolu 8 Diş)** NPT 4 (4" Inside Threaded 8 TPI)	631	47	**[H] Basma Yüksekliği** / Total Manometric Head [m]	68	63	59	56	53	50	46	42	36	30
FDP 8420 / 03	FM8	30	40	61,0			818	66		100	94	89	84	80	76	70	64	57	47
FDP 8420 / 04	FM8	37	50	75,0			950	79		133	127	121	113	108	102	95	87	77	65
FDP 8420 / 05	FM8	45	60	89,0			1082	91		167	160	153	144	138	132	124	114	102	88
FDP 8420 / 06	FM8	55	75	109,0			1214	103		197	190	182	172	166	158	148	136	121	104
FDP 8420 / 07	FM8	63	85	122,0			1346	116		235	224	214	203	196	187	175	161	144	124
FDP 8420 / 08	FM8	75	100	145,0			1478	128		269	257	247	234	225	215	202	187	168	146
FDP 8420 / 09	FM8	81	110	157,0			1610	141		298	288	277	263	254	243	229	211	190	165
FDP 8420 / 10	FM8	92	125	179,0			1742	153		333	319	308	293	282	269	253	234	210	182
FDP 8420 / 11	FM10	110	150	205,0	**Ø 230**		1874	171		363	352	338	321	309	294	276	254	228	197
FDP 8420 / 12	FM10	110	150	205,0			2006	184		395	381	366	347	334	318	299	275	247	214
FDP 8420 / 13	FM10	129	175	238,0			2138	196		430	414	398	376	362	344	323	297	266	230
FDP 8420 / 14	FM10	129	175	238,0			2270	209		463	444	427	403	388	369	346	318	285	245
FDP 8420 / 15	FM10	147	200	277,0			2402	221		500	480	463	440	425	406	383	353	317	274
FDP 8420 / 16	FM10	147	200	277,0			2534	233		531	512	494	470	453	431	405	373	335	290
FDP 8420 / 17	FM10	166	225	309,0			2666	246		559	541	521	495	477	455	427	393	352	305
FDP 8420 / 18	FM10	166	225	309,0			2798	258		596	574	554	528	510	487	458	423	379	328
FDP 8420 / 19	FM10	185	250	349,0			2930	271		625	603	584	558	540	517	488	452	407	354
FDP 8420 / 20	FM10	185	250	349,0			3062	283		657	635	614	587	568	544	513	475	429	372
FDP 8420 / 21	FM12	200	275	383,0			3194	296		690	667	645	616	597	571	539	499	450	391
FDP 8420 / 22	FM12	200	275	383,0			3326	308		723	699	676	646	626	598	564	523	472	410
FDP 8420 / 23	FM12	220	300	420,0			3458	320		756	730	706	675	654	625	590	547	493	428

Dökme Demir Fan - Difüzör / Cast Iron Impeller - Diffuser

Performans Toleransları / Performance Tolerances : EN ISO 9906

Çalışma Koşulları
Working Conditions

Çalışma Gerilimi / Operating Voltage	: 3 x 230V - 380V - 460V (- %10 / +%10)
Frekans / Frequency	: 60 Hz
Maks. Su Sıcaklığı / Max. Water Temp.	: 40 °C
Maks. Kum Miktarı / Max. Sand Amount	: 50 g / m³
Dönüş Yönü / Rotation	: Saatin Tersi Yönünde / Counterclockwise
Dönüş Hızı / Rotational Speed	: 3450 rpm
Mil Çapı / Shaft Diameter	: Ø 30 mm
Mil Ucu / Shaft End	: NEMA Stadardına Uygun / According to NEMA Standard

Performans Parametreleri
Performance Parameters

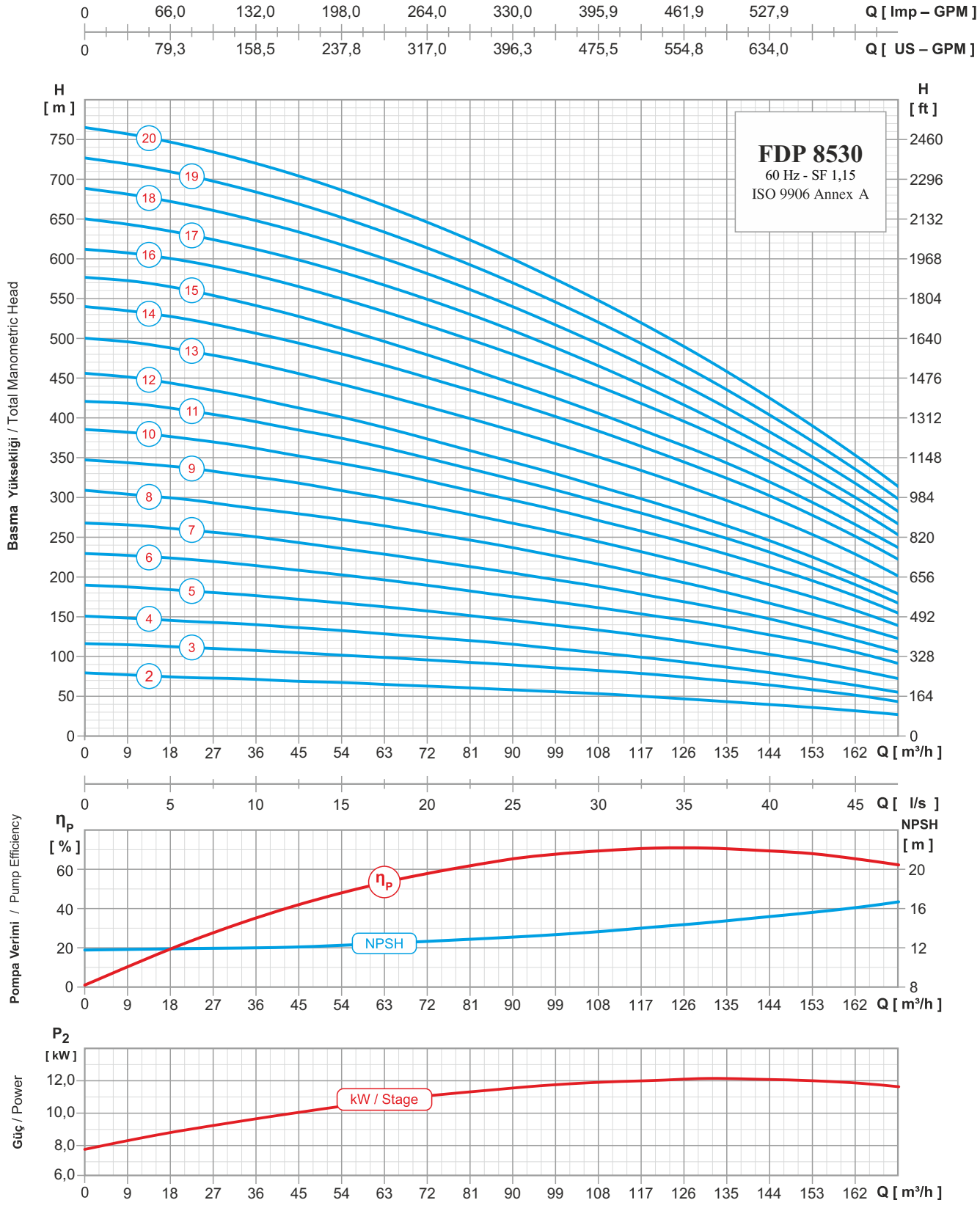
Atmosferik Basınç / Atmospheric Pressure	: 1 Bar
Su Sıcaklığı / Water Temp.	: 15 °C
Kinematik Viskozite / Kinematic Viscosity	: 1 mm² / s
Özgül Yoğunluk / Specific Density	: 1000 kg / m³
Servis Faktörü / Service Factor (S.F.)	: 1,15

FDP 8530

Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow

Performans Eğrileri
Performance Curves

3x460 V
60 Hz / 3450 rpm



EN ISO 9001

Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow

FDP 8530

Teknik Veriler
Technical Data

3x460 V
60 Hz / 3450 rpm

Pompa Tipi Pump Type	Motor Tipi Motor Type	Motor Gücü Motor Power [S.F.=1,15]		Akım Current [460 V]	Maks. Pompa Çapı Max. Pump Dia	Çıkış Çapı Outlet Diameter	Pompa Boyu Pump Length	Pompa Ağırlığı Pump Weight	[Q] Kapasite - Capacity									
									[Imp - GPM]	0	120,3	240,1	360,4	400,3	440,3	480,3	520,2	560,2	600,5
									[US - GPM]	**0**	**144,4**	**288,4**	**432,8**	**480,8**	**528,8**	**576,8**	**624,8**	**672,8**	**721,2**
		P_N		I_N	**Ø Max_P**	**Ø D**	L_P	W_P	[l/s]	0	9,1	18,2	27,3	30,3	33,4	36,4	39,4	42,4	45,5
		[kW]	[HP]	[A]	[mm]	[inch]	[mm]	[kg]	**[m³/h]**	**0**	**32,8**	**65,5**	**98,3**	**109,2**	**120,1**	**131,0**	**141,9**	**152,8**	**163,8**
FDP 8530 / 02	FM6	26	35	55,7	Ø 202	NPT 5 (5" İçten Pasolu 8 Diş) NPT 5 (5" Inside Threaded 8 TPI)	643	48	[H] Basma Yüksekliği / Total Manometric Head [m]	79	72	64	56	53	49	45	40	36	31
FDP 8530 / 03	FM8	37	50	75,0			836	68		116	109	98	86	82	77	71	65	58	50
FDP 8530 / 04	FM8	45	60	89,0			974	81		151	141	127	110	104	97	89	81	72	62
FDP 8530 / 05	FM8	55	75	109,0			1112	94		190	178	161	140	132	124	115	105	94	81
FDP 8530 / 06	FM8	75	100	145,0			1250	107		230	216	195	169	160	151	141	129	117	103
FDP 8530 / 07	FM8	81	110	157,0			1388	120		268	253	227	197	187	175	163	150	135	118
FDP 8530 / 08	FM8	92	125	179,0			1526	133		309	288	262	227	215	201	186	170	153	135
FDP 8530 / 09	FM10	110	150	205,0	Ø 230		1664	152		347	328	296	257	243	227	211	193	175	154
FDP 8530 / 10	FM10	110	150	205,0			1802	165		385	365	330	285	269	253	235	216	196	172
FDP 8530 / 11	FM10	129	175	238,0			1940	178		421	399	359	310	293	275	256	235	212	186
FDP 8530 / 12	FM10	129	175	238,0			2078	191		456	428	384	331	312	293	272	250	226	198
FDP 8530 / 13	FM10	147	200	277,0			2216	203		500	472	424	369	349	328	305	281	254	224
FDP 8530 / 14	FM10	166	225	309,0			2354	218		540	511	462	403	381	358	333	308	278	246
FDP 8530 / 15	FM10	166	225	309,0			2492	232		577	546	491	427	403	378	353	325	294	260
FDP 8530 / 16	FM10	185	250	349,0			2630	244		612	583	529	462	437	411	383	352	318	280
FDP 8530 / 17	FM10	185	250	349,0			2768	256		650	617	562	490	462	433	402	368	332	294
FDP 8530 / 18	FM12	200	275	383,0			2906	269		689	653	595	519	490	458	425	389	352	311
FDP 8530 / 19	FM12	220	300	420,0			3044	282		727	689	628	548	517	484	449	411	371	328
FDP 8530 / 20	FM12	220	300	420,0			3182	294		765	725	661	576	544	509	473	433	391	346

Dökme Demir Fan - Difüzör / Cast Iron Impeller - Diffuser

Performans Toleransları / Performance Tolerances : EN ISO 9906

Çalışma Koşulları
Working Conditions

Çalışma Gerilimi / Operating Voltage	: 3 x 230V - 380V - 460V (- %10 / +%10)
Frekans / Frequency	: 60 Hz
Maks. Su Sıcaklığı / Max. Water Temp.	: 40 °C
Maks. Kum Miktarı / Max. Sand Amount	: 50 g / m³
Dönüş Yönü / Rotation	: Saatin Tersi Yönünde / Counterclockwise
Dönüş Hızı / Rotational Speed	: 3450 rpm
Mil Çapı / Shaft Diameter	: Ø 30 mm
Mil Ucu / Shaft End	: NEMA Stadardına Uygun / According to NEMA Standard

Performans Parametreleri
Performance Parameters

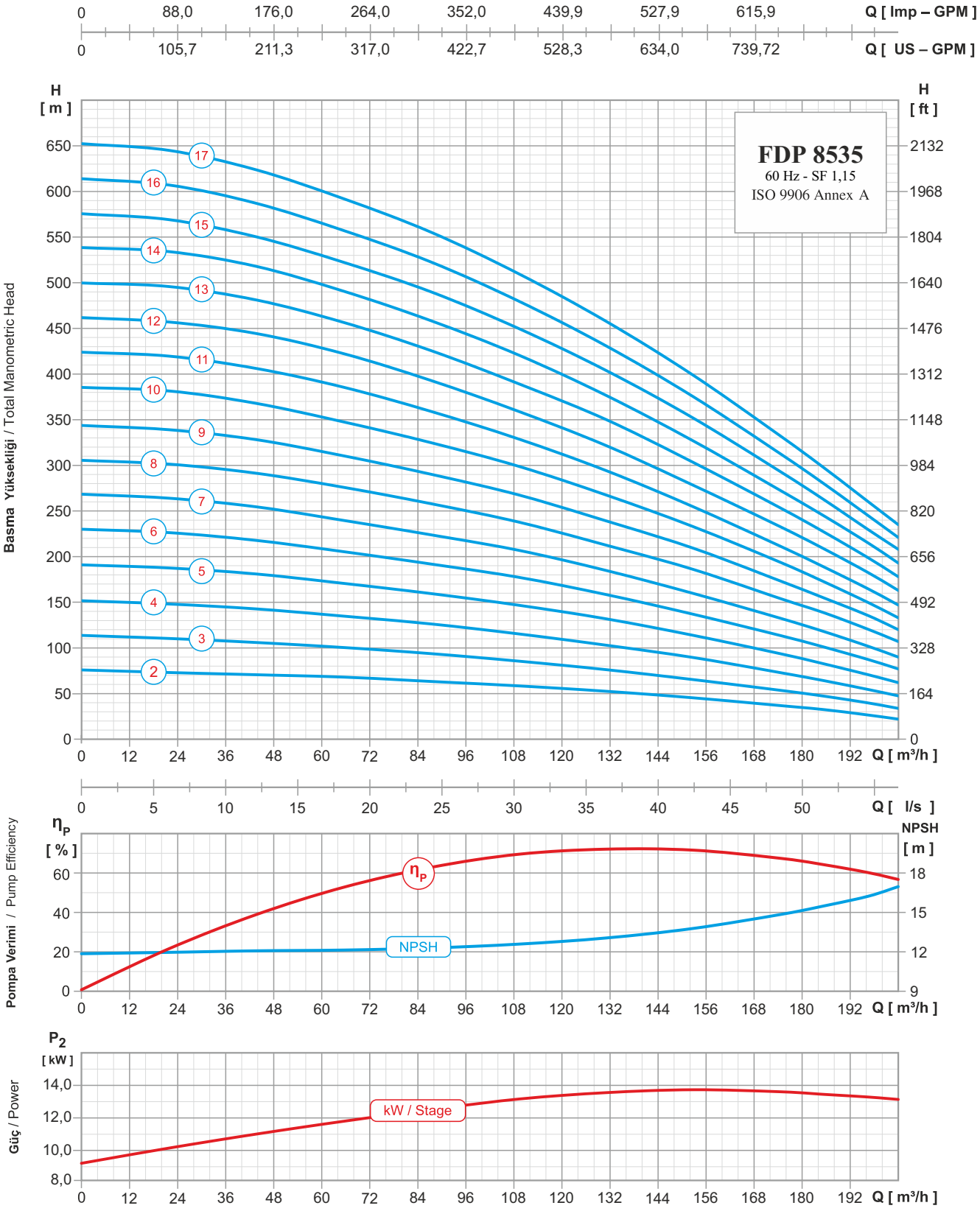
Atmosferik Basınç / Atmospheric Pressure	: 1 Bar
Su Sıcaklığı / Water Temp.	: 15 °C
Kinematik Viskozite / Kinematic Viscosity	: 1 mm² / s
Özgül Yoğunluk / Specific Density	: 1000 kg / m³
Servis Faktörü / Service Factor (S.F.)	: 1,15

FDP 8535

Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow

Performans Eğrileri
Performance Curves

3x460 V
60 Hz / 3450 rpm



EN ISO 9001

Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow

FDP 8535

Teknik Veriler
Technical Data

3x460 V
60 Hz / 3450 rpm

Pompa Tipi Pump Type	Motor Tipi Motor Type	Motor Gücü Motor Power [S.F.=1,15]		Akım Current [460 V]	Maks. Pompa Çapı Max. Pump Dia	Çıkış Çapı Outlet Diameter	Pompa Boyu Pump Length	Pompa Ağırlığı Pump Weight	[Q] Kapasite - Capacity									
									[Imp - GPM]	0	79,9	160,2	240,1	320,1	400,3	480,3	560,2	640,5	720,4
									[US - GPM]	**0**	**96,0**	**192,4**	**288,4**	**384,4**	**480,8**	**576,8**	**672,8**	**769,2**	**865,2**
		P_N		I_N	**Ø Max_P**	**Ø D**	L_P	W_P	[l/s]	0	6,1	12,1	18,2	24,3	30,3	36,4	42,4	48,5	54,6
		[kW]	[HP]	[A]	[mm]	[inch]	[mm]	[kg]	**[m^3/h]**	**0**	**21,8**	**43,7**	**65,5**	**87,3**	**109,2**	**131,0**	**152,8**	**174,7**	**196,5**
FDP 8535 / 02	FM8	30	40	61,0	Ø 202	NPT 5 (5" İçten Pasolu 8 Diş) NPT 5 (5" Inside Threaded 8 TPI)	698	54	**[H] Basma Yüksekliği** / Total Manometric Head [m]	76	73	71	68	63	58	53	45	37	26
FDP 8535 / 03	FM8	45	60	89,0			836	68		114	110	106	100	94	86	76	65	53	40
FDP 8535 / 04	FM8	55	75	109,0			974	81		152	148	143	135	126	115	103	89	73	54
FDP 8535 / 05	FM8	63	85	122,0			1112	94		191	188	181	171	159	147	132	114	94	71
FDP 8535 / 06	FM8	75	100	145,0			1250	107		230	226	218	205	192	177	158	137	113	87
FDP 8535 / 07	FM8	92	125	179,0			1388	120		268	264	255	240	224	207	185	160	132	102
FDP 8535 / 08	FM10	110	150	205,0	Ø 230		1526	138		306	301	291	276	258	238	213	186	154	120
FDP 8535 / 09	FM10	129	175	238,0			1664	151		344	339	328	310	290	268	239	209	173	135
FDP 8535 / 10	FM10	129	175	238,0			1802	164		385	381	368	348	325	299	268	233	194	150
FDP 8535 / 11	FM10	147	200	277,0			1940	177		424	420	406	385	359	329	294	255	211	165
FDP 8535 / 12	FM10	147	200	277,0			2078	190		462	457	444	422	393	359	322	278	232	182
FDP 8535 / 13	FM10	166	225	309,0			2216	203		500	496	481	456	426	389	350	303	253	199
FDP 8535 / 14	FM10	185	250	349,0			2354	217		539	534	518	491	458	421	377	327	272	215
FDP 8535 / 15	FM10	185	250	349,0			2492	230		576	569	550	522	490	450	404	352	293	230
FDP 8535 / 16	FM12	200	275	383,0			2630	243		614	607	587	557	523	480	431	375	312	245
FDP 8535 / 17	FM12	220	300	420,0			2768	256		652	645	624	592	555	510	458	399	332	260

Dökme Demir Fan - Difüzör / Cast Iron Impeller - Diffuser

Performans Toleransları / Performance Tolerances : EN ISO 9906

Çalışma Koşulları
Working Conditions

Çalışma Gerilimi / Operating Voltage	: 3 x 230V - 380V - 460V (- %10 / +%10)
Frekans / Frequency	: 60 Hz
Maks. Su Sıcaklığı / Max. Water Temp.	: 40 °C
Maks. Kum Miktarı / Max. Sand Amount	: 50 g / m^3
Dönüş Yönü / Rotation	: Saatin Tersi Yönünde / Counterclockwise
Dönüş Hızı / Rotational Speed	: 3450 rpm
Mil Çapı / Shaft Diameter	: Ø 30 mm
Mil Ucu / Shaft End	: NEMA Stadardına Uygun / According to NEMA Standard

Performans Parametreleri
Performance Parameters

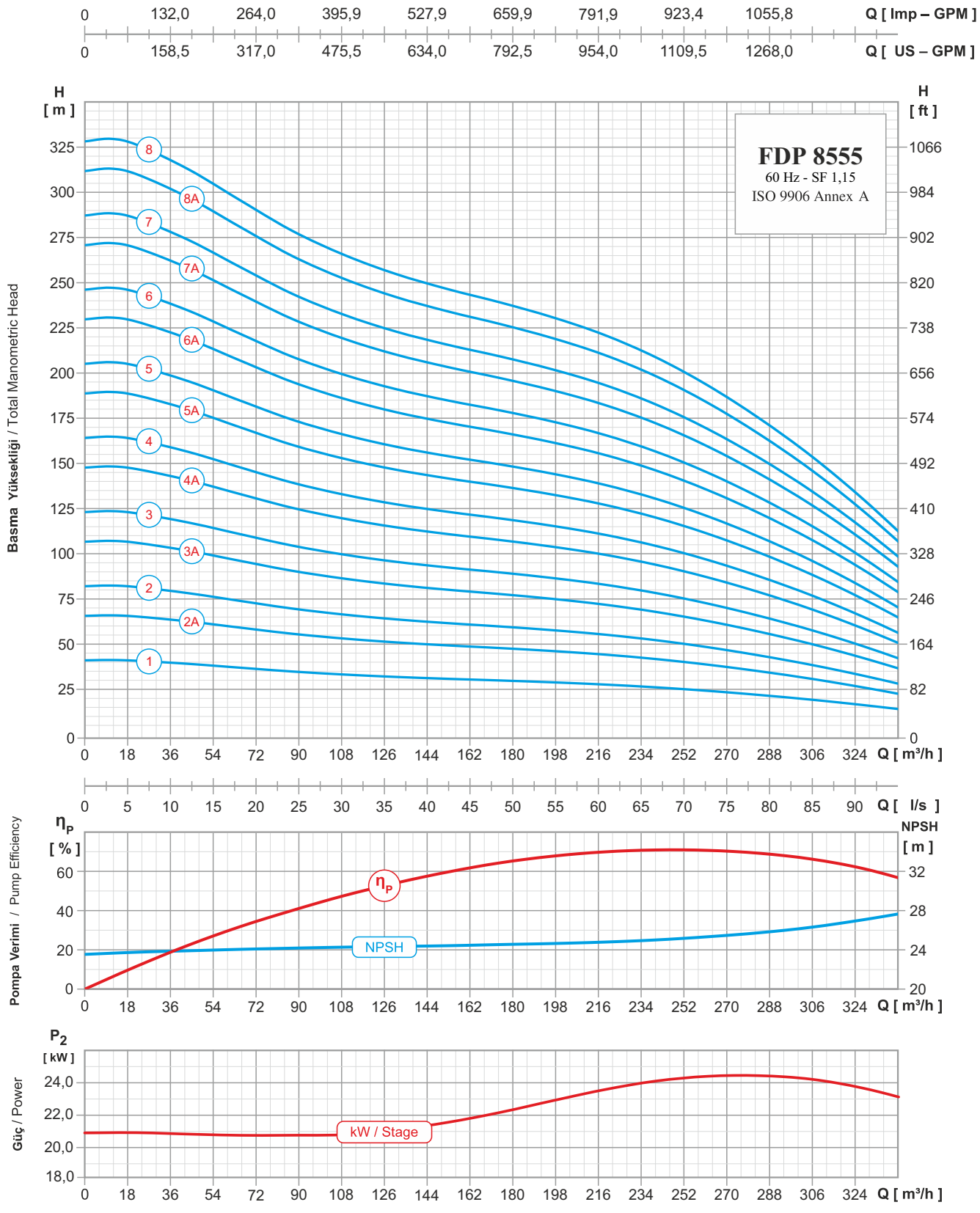
Atmosferik Basınç / Atmospheric Pressure	: 1 Bar
Su Sıcaklığı / Water Temp.	: 15 °C
Kinematik Viskozite / Kinematic Viscosity	: 1 mm^2 / s
Özgül Yoğunluk / Specific Density	: 1000 kg / m^3
Servis Faktörü / Service Factor (S.F.)	: 1,15

FDP 8555

Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow

Performans Eğrileri
Performance Curves

3x460 V
60 Hz / 3450 rpm



EN ISO 9001

Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow

FDP 8555

Teknik Veriler
Technical Data

3x460 V
60 Hz / 3450 rpm

Pompa Tipi Pump Type	**Motor Tipi** Motor Type	**Motor Gücü** Motor Power [S.F.=1,15]		**Akım** Current [460 V]	**Maks. Pompa Çapı** Max. Pump Dia	**Çıkış Çapı** Outlet Diameter	**Pompa Boyu** Pump Length	**Pompa Ağırlığı** Pump Weight	**[Q] Kapasite** - Capacity									
									[Imp - GPM]	0	240,1	480,3	720,4	800,3	880,6	960,5	1040,5	1120,7	1200,7
									[US - GPM]	**0**	**288,4**	**576,8**	**865,2**	**961,1**	**1057,6**	**1153,6**	**1249,5**	**1346,0**	**1441,9**
		P_N		I_N	**Ø** Max_P	**Ø D**	L_P	W_P	[l/s]	0	18,2	36,4	54,6	60,6	66,7	72,8	78,8	84,9	91,0
		[kW]	[HP]	[A]	[mm]	[inch]	[mm]	[kg]	**[m³/h]**	**0**	**65,5**	**131,0**	**196,5**	**218,3**	**240,2**	**262,0**	**283,8**	**305,7**	**327,5**
FDP 8555 / 01	FM6	26	35	55,7	**Ø 212**	**NPT 5 (5" İçten Pasolu 8 Diş)** NPT 5 (5" Inside Threaded 8 TPI)	612	51	**[H] Basma Yüksekliği** / Total Manometric Head [m]	41	37	32	29	28	26	24	22	19	16
FDP 8555 / 2A	FM8	37	50	75,0			802	71		66	59	51	46	44	42	39	35	31	26
FDP 8555 / 02	FM8	45	60	89,0			802	71		82	74	64	58	55	52	48	44	38	33
FDP 8555 / 3A	FM8	60	80	116,0			992	91		107	96	83	75	72	68	63	57	50	42
FDP 8555 / 03	FM8	70	95	136,0			992	91		123	111	96	87	83	78	72	66	58	49
FDP 8555 / 4A	FM8	81	110	157,0			1182	111		148	133	115	104	100	94	87	79	69	59
FDP 8555 / 04	FM8	92	125	179,0			1182	111		164	148	127	115	111	104	97	87	77	65
FDP 8555 / 5A	FM8	110	150	212,0			1372	131		189	170	146	133	127	120	111	101	89	75
FDP 8555 / 05	FM8	110	150	212,0			1372	131		205	185	159	144	138	130	121	109	96	81
FDP 8555 / 6A	FM10	129	175	238,0			1562	150		230	207	178	162	155	146	135	122	108	91
FDP 8555 / 06	FM10	129	175	238,0			1562	150		246	222	191	173	166	157	145	131	115	98
FDP 8555 / 7A	FM10	147	200	277,0			1752	170		271	244	210	191	182	172	159	144	127	107
FDP 8555 / 07	FM10	166	225	309,0			1752	170		287	259	223	202	194	183	169	153	135	114
FDP 8555 / 8A	FM10	166	225	309,0			1942	189		312	281	242	219	210	198	184	166	146	124
FDP 8555 / 08	FM10	185	250	349,0			1942	189		328	295	255	231	221	209	193	175	154	130

Dökme Demir Fan - Difüzör / Cast Iron Impeller - Diffuser

Performans Toleransları / Performance Tolerances : EN ISO 9906

Çalışma Koşulları
Working Conditions

Çalışma Gerilimi / Operating Voltage	: 3 x 230V - 380V - 460V (- %10 / +%10)
Frekans / Frequency	: 60 Hz
Maks. Su Sıcaklığı / Max. Water Temp.	: 40 °C
Maks. Kum Miktarı / Max. Sand Amount	: 50 g / m³
Dönüş Yönü / Rotation	: Saatin Tersi Yönünde / Counterclockwise
Dönüş Hızı / Rotational Speed	: 3450 rpm
Mil Çapı / Shaft Diameter	: Ø 30 mm
Mil Ucu / Shaft End	: NEMA Stadardına Uygun / According to NEMA Standard

Performans Parametreleri
Performance Parameters

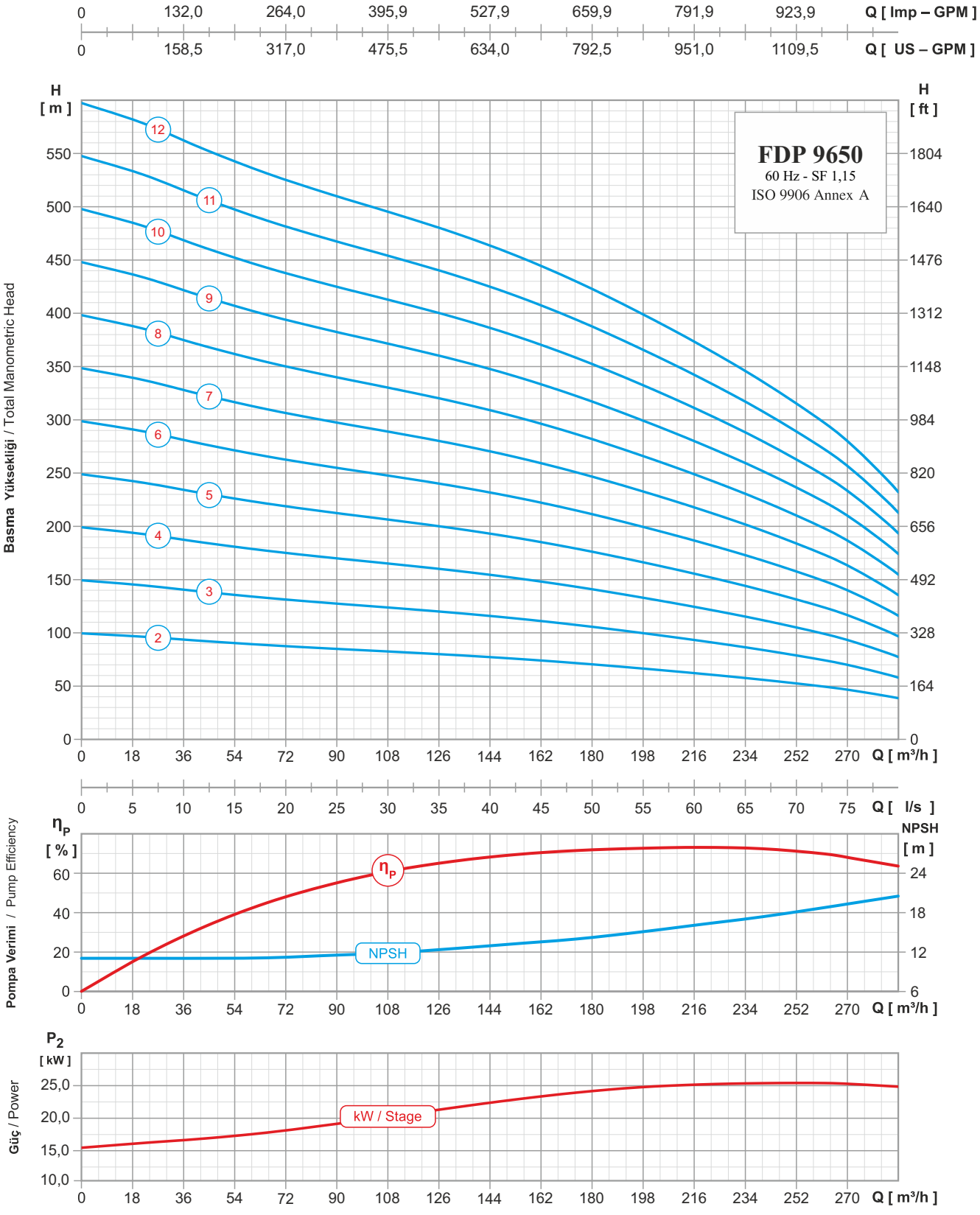
Atmosferik Basınç / Atmospheric Pressure	: 1 Bar
Su Sıcaklığı / Water Temp.	: 15 °C
Kinematik Viskozite / Kinematic Viscosity	: 1 mm² / s
Özgül Yoğunluk / Specific Density	: 1000 kg / m³
Servis Faktörü / Service Factor (S.F.)	: 1,15

FDP 9650

Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow

Performans Eğrileri
Performance Curves

3x460 V
60 Hz / 3450 rpm



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Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow

FDP 9650

Teknik Veriler
Technical Data

3x460 V
60 Hz / 3450 rpm

Pompa Tipi Pump Type	Motor Tipi Motor Type	Motor Gücü Motor Power [S.F.=1,15]		Akım Current [460 V]	Maks. Pompa Çapı Max. Pump Dia	Çıkış Çapı Outlet Diameter	Pompa Boyu Pump Length	Pompa Ağırlığı Pump Weight	[Q] Kapasite - Capacity									
									[Imp - GPM]	0	160,2	320,1	480,3	640,5	720,4	800,3	880,6	960,5	1040,5
									[US - GPM]	**0**	**192,4**	**384,4**	**576,8**	**769,2**	**865,2**	**961,1**	**1057,6**	**1153,6**	**1249,5**
		P_N		I_N	**Ø** Max_P	**Ø D**	L_P	W_P	[l/s]	0	12,1	24,3	36,4	48,5	54,6	60,6	66,7	72,8	78,8
		[kW]	[HP]	[A]	[mm]	[inch]	[mm]	[kg]	**[m³/h]**	**0**	**43,7**	**87,3**	**131,0**	**174,7**	**196,5**	**218,3**	**240,2**	**262,0**	**283,8**
FDP 9650 / 02	FM8	55	75	109,0	**Ø 230**	**NPT 6 (6" İçten Pasolu 8 Diş)** NPT6 (6" Inside Threaded 8 TPI)	800	84	**[H] Basma Yüksekliği** Total Manometric Head [m]	100	92	85	79	72	67	62	56	49	41
FDP 9650 / 03	FM8	75	100	145,0			964	103		149	138	128	119	107	100	92	84	74	61
FDP 9650 / 04	FM10	110	150	205,0			1128	122		199	185	171	159	143	134	123	112	99	81
FDP 9650 / 05	FM10	129	175	238,0			1292	141		249	231	213	198	179	167	154	140	124	102
FDP 9650 / 06	FM10	147	200	277,0			1456	160		299	277	256	238	215	200	185	168	148	122
FDP 9650 / 07	FM10	166	225	309,0			1620	179		348	323	299	278	251	234	216	196	173	142
FDP 9650 / 08	FM12	200	275	383,0			1784	198		398	369	341	317	286	267	247	224	198	163
FDP 9650 / 09	FM12	220	300	420,0			1948	217		448	415	384	357	322	301	277	252	223	183
FDP 9650 / 10	FM12	240	325	464,0			2112	236		498	461	427	397	358	334	308	280	247	204
FDP 9650 / 11	FM12	260	350	502,0			2276	255		548	507	469	436	394	368	339	308	272	224
FDP 9650 / 12	FM12	300	400	542,0			2440	273		597	554	512	476	429	401	370	336	297	244

Dökme Demir Fan - Difüzör / Cast Iron Impeller - Diffuser

Performans Toleransları / Performance Tolerances : EN ISO 9906

Çalışma Koşulları
Working Conditions

Çalışma Gerilimi / Operating Voltage	: 3 x 230V - 380V - 460V (- %10 / +%10)
Frekans / Frequency	: 60 Hz
Maks. Su Sıcaklığı / Max. Water Temp.	: 40 °C
Maks. Kum Miktarı / Max. Sand Amount	: 50 g / m³
Dönüş Yönü / Rotation	: Saatin Tersi Yönünde / Counterclockwise
Dönüş Hızı / Rotational Speed	: 3450 rpm
Mil Çapı / Shaft Diameter	: Ø 35 mm
Mil Ucu / Shaft End	: NEMA Stadardına Uygun / According to NEMA Standard

Performans Parametreleri
Performance Parameters

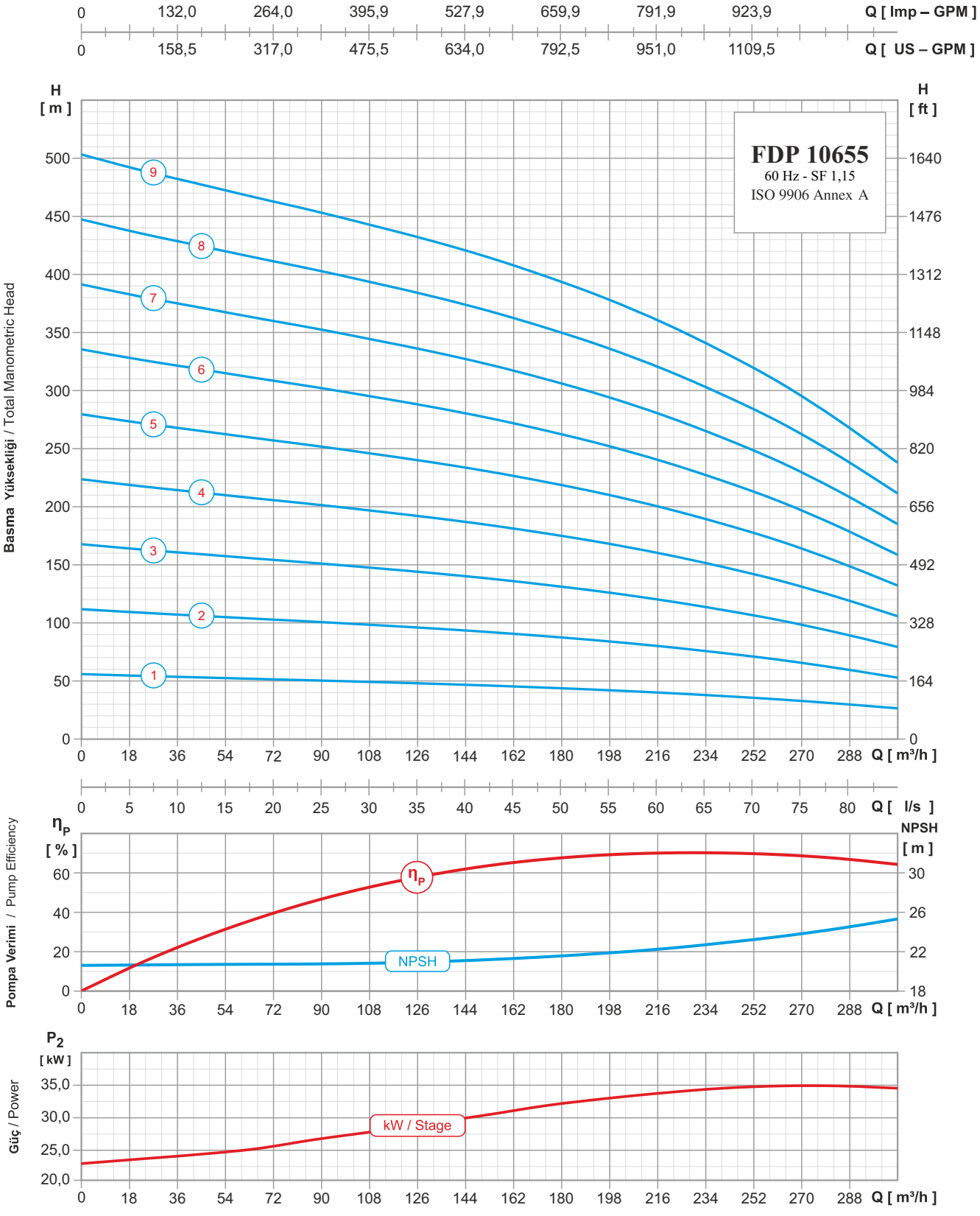
Atmosferik Basınç / Atmospheric Pressure	: 1 Bar
Su Sıcaklığı / Water Temp.	: 15 °C
Kinematik Viskozite / Kinematic Viscosity	: 1 mm² / s
Özgül Yoğunluk / Specific Density	: 1000 kg / m³
Servis Faktörü / Service Factor (S.F.)	: 1,15

FDP 10655

Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow

Performans Eğrileri
Performance Curves

3x460 V
60 Hz / 3450 rpm



EN ISO 9001

Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow

FDP 10655

Teknik Veriler
Technical Data

3x460 V
60 Hz / 3450 rpm

Pompa Tipi Pump Type	**Motor Tipi** Motor Type	**Motor Gücü** Motor Power [S.F.=1,15]		**Akım** Current [460 V]	**Maks. Pompa Çapı** Max. Pump Dia	**Çıkış Çapı** Outlet Diameter	**Pompa Boyu** Pump Length	**Pompa Ağırlığı** Pump Weight	**[Q] Kapasite** - Capacity									
									[Imp - GPM]	0	160,2	320,1	480,3	640,5	720,4	800,3	880,6	960,5	1040,5
									[US - GPM]	**0**	**192,4**	**384,4**	**576,8**	**769,2**	**865,2**	**961,1**	**1057,6**	**1153,6**	**1249,5**
		P_N		I_N	**Ø** Max_P	**Ø D**	L_P	W_P	[l/s]	0	12,1	24,3	36,4	48,5	54,6	60,6	66,7	72,8	78,8
		[kW]	**[HP]**	**[A]**	**[mm]**	**[inch]**	**[mm]**	**[kg]**	**[m³/h]**	**0**	**43,7**	**87,3**	**131,0**	**174,7**	**196,5**	**218,3**	**240,2**	**262,0**	**283,8**
FDP 10655 / 01	FM8	37	50	75,0	**Ø 265**	**NPT 6 (6" İçten Pasolu 8 Diş)** NPT 6 (6" Inside Threaded 8 TPI)	748	86	**[H] Basma Yüksekliği** Total Manometric Head [m]	56	53	51	48	44	42	40	37	34	30
FDP 10655 / 02	FM8	75	100	145,0			935	113		112	106	101	95	88	84	80	74	68	61
FDP 10655 / 03	FM10	110	150	205,0			1122	139		168	159	152	143	133	126	119	111	102	91
FDP 10655 / 04	FM10	147	200	277,0			1309	166		224	212	202	191	177	169	159	148	136	122
FDP 10655 / 05	FM10	166	225	309,0			1496	193		280	266	253	238	221	211	199	185	170	152
FDP 10655 / 06	FM12	200	275	383,0			1683	219		335	319	303	286	265	253	239	222	204	183
FDP 10655 / 07	FM12	240	325	464,0			1870	245		391	372	354	334	309	295	279	260	238	213
FDP 10655 / 08	FM12	260	350	502,0			2057	272		447	425	404	381	354	337	318	297	272	244
FDP 10655 / 09	FM12	300	400	542,0			2244	298		503	478	455	429	398	379	358	334	306	274

Dökme Demir Fan - Difüzör / Cast Iron Impeller - Diffuser

Performans Toleransları / Performance Tolerances : EN ISO 9906

Çalışma Koşulları
Working Conditions

Çalışma Gerilimi / Operating Voltage	: 3 x 230V - 380V - 460V (- %10 / +%10)
Frekans / Frequency	: 60 Hz
Maks. Su Sıcaklığı / Max. Water Temp.	: 40 °C
Maks. Kum Miktarı / Max. Sand Amount	: 50 g / m³
Dönüş Yönü / Rotation	: Saatin Tersi Yönünde / Counterclockwise
Dönüş Hızı / Rotational Speed	: 3450 rpm
Mil Çapı / Shaft Diameter	: Ø 35 mm
Mil Ucu / Shaft End	: NEMA Stadardına Uygun / According to NEMA Standard

Performans Parametreleri
Performance Parameters

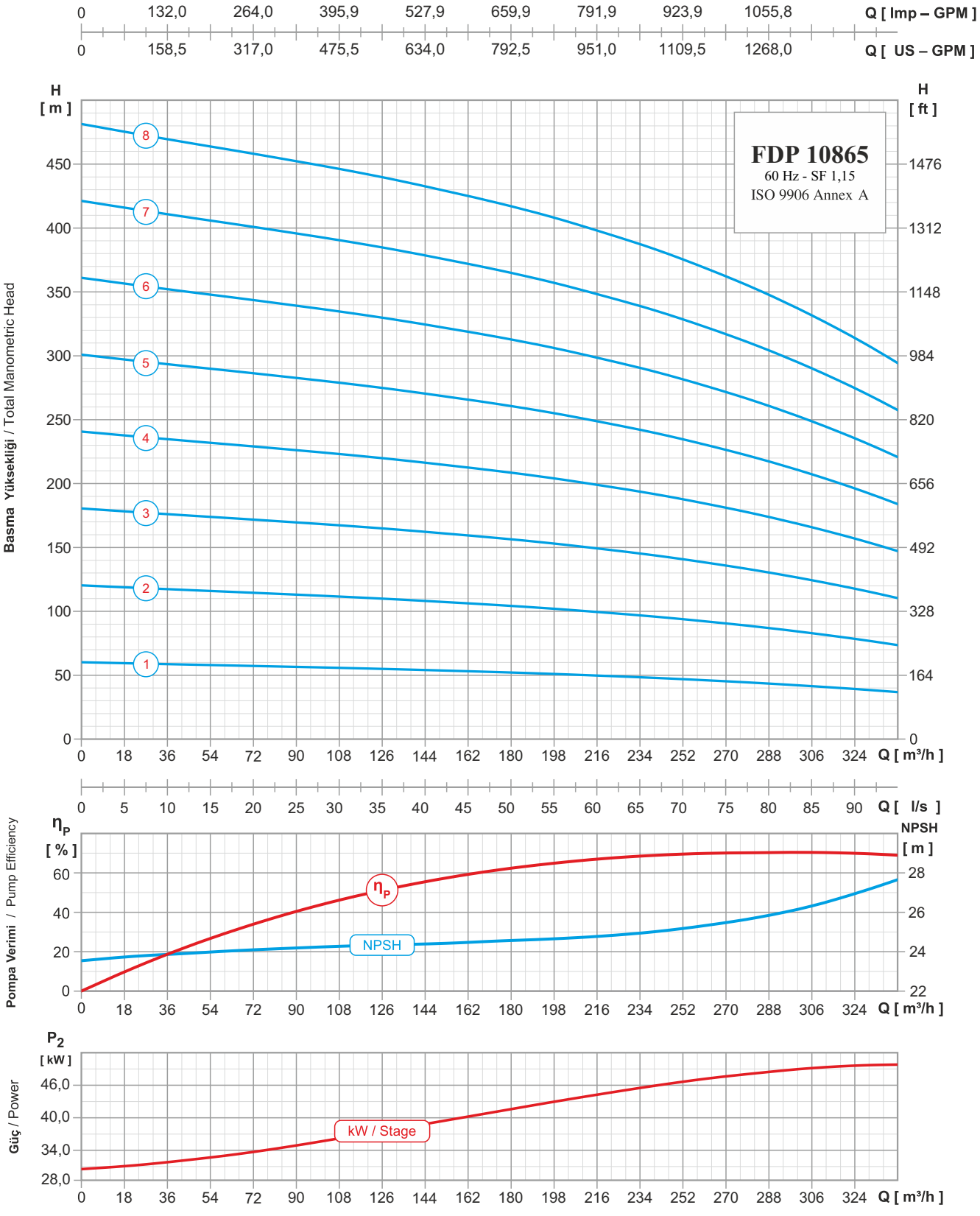
Atmosferik Basınç / Atmospheric Pressure	: 1 Bar
Su Sıcaklığı / Water Temp.	: 15 °C
Kinematik Viskozite / Kinematic Viscosity	: 1 mm² / s
Özgül Yoğunluk / Specific Density	: 1000 kg / m³
Servis Faktörü / Service Factor (S.F.)	: 1,15

FDP 10865

Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow

Performans Eğrileri
Performance Curves

3x460 V
60 Hz / 3450 rpm



EN ISO 9001 CE TSE TS 11146 POMSAD Europump Member of Europump

Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow

FDP 10865

Teknik Veriler
Technical Data

3x460 V
60 Hz / 3450 rpm

Pompa Tipi Pump Type	**Motor Tipi** Motor Type	**Motor Gücü** Motor Power [S.F.=1,15]		**Akım** Current [460 V]	**Maks. Pompa Çapı** Max. Pump Dia	**Çıkış Çapı** Outlet Diameter	**Pompa Boyu** Pump Length	**Pompa Ağırlığı** Pump Weight	**[Q] Kapasite** - Capacity									
									[Imp - GPM]	0	240,1	480,3	720,4	800,3	880,6	960,5	1040,5	1120,7	1200,7
									[US - GPM]	**0**	**288,4**	**576,8**	**865,2**	**961,1**	**1057,6**	**1153,6**	**1249,5**	**1346,0**	**1441,9**
		P_N		I_N	**Ø** Max_P	**Ø D**	L_P	W_P	[l/s]	0	18,2	36,4	54,6	60,6	66,7	72,8	78,8	84,9	91,0
		[kW]	[HP]	[A]	[mm]	[inch]	[mm]	[kg]	**[m³/h]**	**0**	**65,5**	**131,0**	**196,5**	**218,3**	**240,2**	**262,0**	**283,8**	**305,7**	**327,5**
FDP 10865 / 01	FM8	55	75	109,0	**Ø 265**	**NPT 6 (6" İçten Pasolu 8 Diş)** NPT 6 (6" Inside Threaded 8 TPI)	748	86	**[H] Basma Yüksekliği** Total Manometric Head [m]	60	58	55	51	50	48	46	44	41	39
FDP 10865 / 02	FM10	110	150	205,0			935	113		120	115	109	102	99	96	92	88	83	78
FDP 10865 / 03	FM10	147	200	277,0			1122	139		181	173	164	153	149	144	138	132	124	116
FDP 10865 / 04	FM12	200	275	383,0			1309	166		241	230	219	204	198	192	184	176	166	155
FDP 10865 / 05	FM12	240	325	464,0			1496	193		301	288	274	256	248	240	230	220	207	194
FDP 10865 / 06	FM10	300	400	542,0			1683	219		361	345	328	307	298	288	276	263	249	233
FDP 10865 / 07	FM12	340	450	627,0			1870	246		421	403	383	358	347	336	322	307	290	271
FDP 10865 / 08	FM12	380	500	709,0			2057	273		481	460	438	409	397	383	368	351	332	310

Dökme Demir Fan - Difüzör / Cast Iron Impeller - Diffuser

Performans Toleransları / Performance Tolerances : EN ISO 9906

Çalışma Koşulları
Working Conditions

Çalışma Gerilimi / Operating Voltage	: 3 x 230V - 380V - 460V (- %10 / +%10)
Frekans / Frequency	: 60 Hz
Maks. Su Sıcaklığı / Max. Water Temp.	: 40 °C
Maks. Kum Miktarı / Max. Sand Amount	: 50 g / m³
Dönüş Yönü / Rotation	: Saatin Tersi Yönünde / Counterclockwise
Dönüş Hızı / Rotational Speed	: 3450 rpm
Mil Çapı / Shaft Diameter	: Ø 35 mm
Mil Ucu / Shaft End	: NEMA Stadardına Uygun / According to NEMA Standard

Performans Parametreleri
Performance Parameters

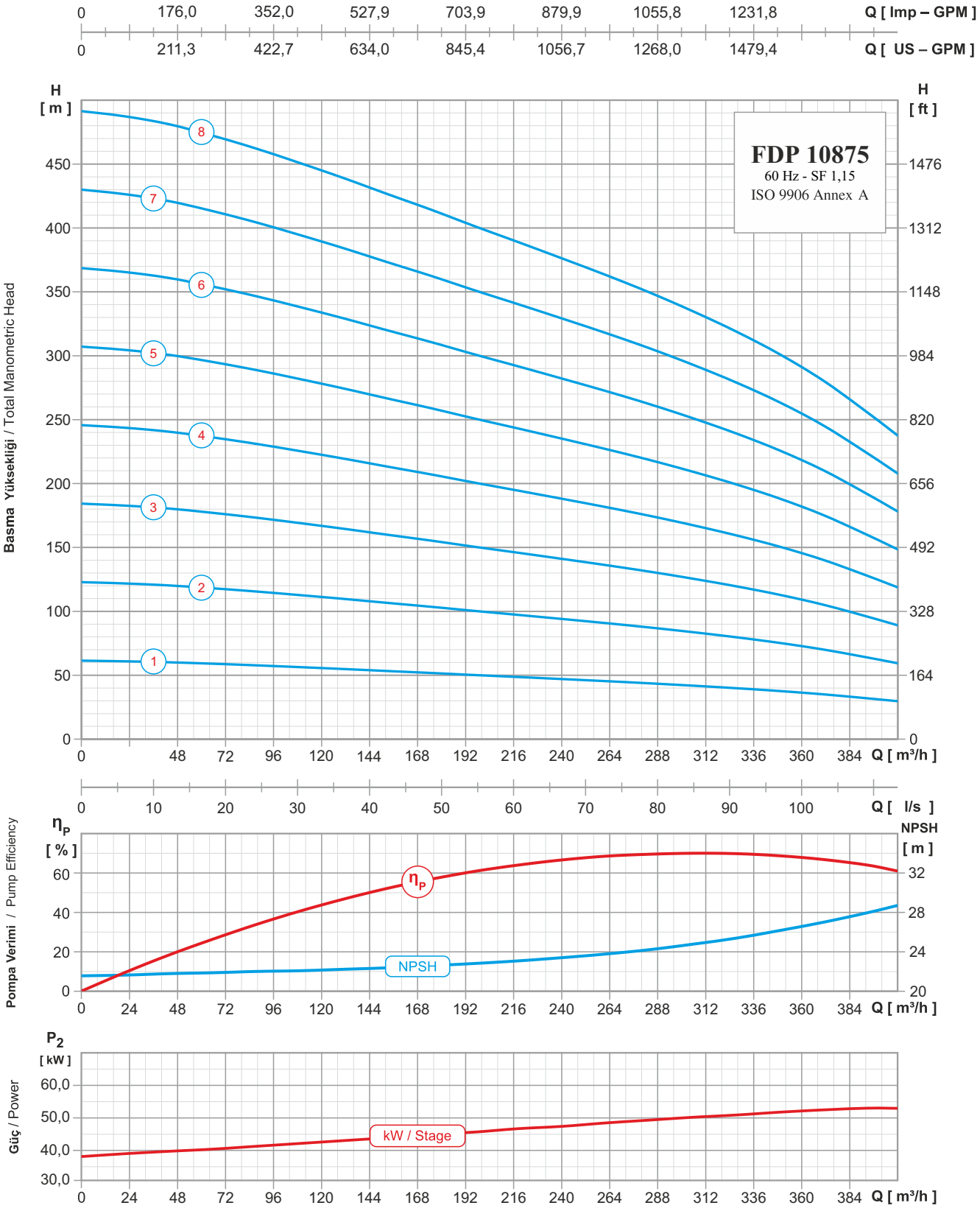
Atmosferik Basınç / Atmospheric Pressure	: 1 Bar
Su Sıcaklığı / Water Temp.	: 15 °C
Kinematik Viskozite / Kinematic Viscosity	: 1 mm² / s
Özgül Yoğunluk / Specific Density	: 1000 kg / m³
Servis Faktörü / Service Factor (S.F.)	: 1,15

FDP 10875

Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow

Performans Eğrileri
Performance Curves

3x460 V
60 Hz / 3450 rpm



EN ISO 9001 CE TSE TS 11146 POMSAD Europump Member of Europump

Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow

FDP 10875

Teknik Veriler
Technical Data

3x460 V
60 Hz / 3450 rpm

Pompa Tipi Pump Type	**Motor Tipi** Motor Type	**Motor Gücü** Motor Power [S.F.=1,15]		**Akım** Current [460 V]	**Maks. Pompa Çapı** Max. Pump Dia	**Çıkış Çapı** Outlet Diameter	**Pompa Boyu** Pump Length	**Pompa Ağırlığı** Pump Weight	**[Q] Kapasite** - Capacity									
									[Imp - GPM]	0	320,1	640,5	960,5	1040,5	1120,7	1200,7	1280,6	1360,9	1440,8
									[US - GPM]	**0**	**384,4**	**769,2**	**1153,6**	**1249,5**	**1346,0**	**1441,9**	**1537,9**	**1634,4**	**1730,3**
		P_N		I_N	**Ø** Max_P	**Ø D**	L_P	W_P	[l/s]	0	24,3	48,5	72,8	78,8	84,9	91,0	97,0	103,1	109,2
		[kW]	[HP]	[A]	[mm]	[inch]	[mm]	[kg]	**[m³/h]**	**0**	**87,3**	**174,7**	**262,0**	**283,8**	**305,7**	**327,5**	**349,3**	**371,2**	**393,0**
FDP 10875 / 01	FM8	55	75	109,0	**Ø 265**	**NPT 6 (6" İçten Pasolu 8 Diş)** NPT 6 (6" Inside Threaded 8 TPI)	748	86	**[H] Basma Yüksekliği** Total Manometric Head [m]	61	58	52	45	44	42	40	38	35	32
FDP 10875 / 02	FM10	110	150	205,0			935	113		123	116	104	91	87	84	80	75	70	64
FDP 10875 / 03	FM10	166	225	309,0			1122	139		184	173	155	136	131	126	120	113	105	96
FDP 10875 / 04	FM12	200	275	383,0			1309	166		246	231	207	182	175	167	159	150	140	128
FDP 10875 / 05	FM12	260	350	502,0			1496	193		307	289	259	227	218	209	199	188	175	160
FDP 10875 / 06	FM12	300	400	542,0			1683	219		369	347	311	272	262	251	239	226	210	192
FDP 10875 / 07	FM12	340	450	627,0			1870	246		430	404	363	318	306	293	279	263	245	224
FDP 10875 / 08	FM12	380	500	709,0			2057	273		491	462	414	363	350	335	319	301	280	255

Dökme Demir Fan - Difüzör / Cast Iron Impeller - Diffuser

Performans Toleransları / Performance Tolerances : EN ISO 9906

Çalışma Koşulları
Working Conditions

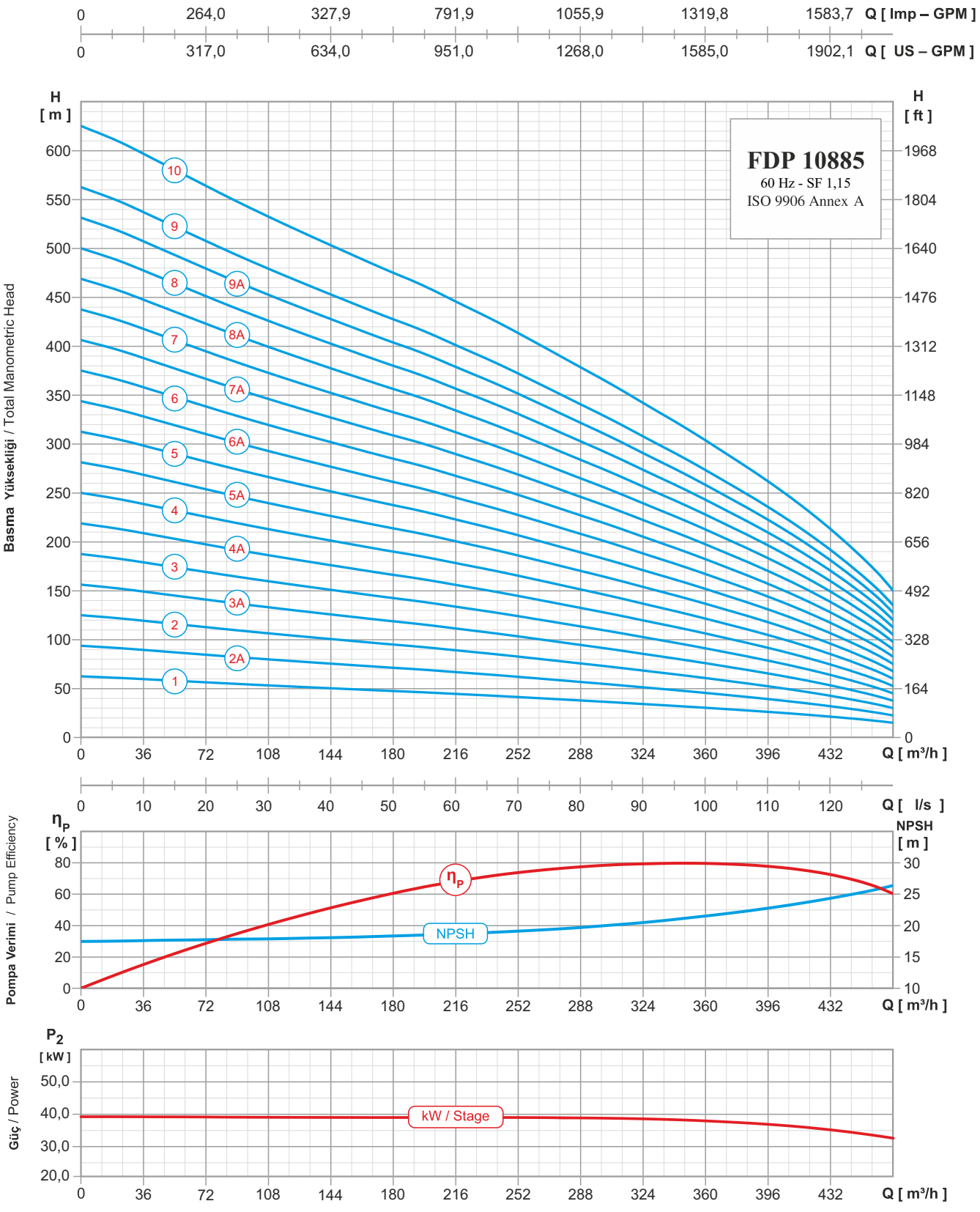
Çalışma Gerilimi / Operating Voltage	: 3 x 230V - 380V - 460V (- %10 / +%10)
Frekans / Frequency	: 60 Hz
Maks. Su Sıcaklığı / Max. Water Temp.	: 40 °C
Maks. Kum Miktarı / Max. Sand Amount	: 50 g / m³
Dönüş Yönü / Rotation	: Saatin Tersi Yönünde / Counterclockwise
Dönüş Hızı / Rotational Speed	: 3450 rpm
Mil Çapı / Shaft Diameter	: Ø 35 mm
Mil Ucu / Shaft End	: NEMA Stadardına Uygun / According to NEMA Standard

Performans Parametreleri
Performance Parameters

Atmosferik Basınç / Atmospheric Pressure	: 1 Bar
Su Sıcaklığı / Water Temp.	: 15 °C
Kinematik Viskozite / Kinematic Viscosity	: 1 mm² / s
Özgül Yoğunluk / Specific Density	: 1000 kg / m³
Servis Faktörü / Service Factor (S.F.)	: 1,15

FDP 10885

Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow



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Döküm Dalgıç Pompa
Cast Iron Submersible Pump
Karışık Akışlı
Mixed Flow

FDP 10885

Teknik Veriler
Technical Data

3x460 V
60 Hz / 3450 rpm

Pompa Tipi Pump Type	**Motor Tipi** Motor Type	**Motor Gücü** Motor Power [S.F.=1,15]		**Akım** Current [460 V]	**Maks. Pompa Çapı** Max. Pump Dia	**Çıkış Çapı** Outlet Diameter	**Pompa Boyu** Pump Length	**Pompa Ağırlığı** Pump Weight	**[Q] Kapasite** - Capacity									
									[Imp - GPM]	0	400,2	800,3	1120,7	1200,7	1280,6	1360,9	1440,8	1520,7	1601,0
									[US - GPM]	**0**	**480,7**	**961,1**	**1346,0**	**1441,9**	**1537,9**	**1634,4**	**1730,3**	**1826,3**	**1922,7**
		P_N		I_N	**Ø** Max_P	**Ø D**	L_P	W_P	[l/s]	0	30,3	60,6	84,9	91,0	97,0	103,1	109,2	115,2	121,3
		[kW]	[HP]	[A]	[mm]	[inch]	[mm]	[kg]	**[m³/h]**	**0**	**109,2**	**218,3**	**305,7**	**327,5**	**349,3**	**371,2**	**393,0**	**414,8**	**436,7**
FDP 10885 / 01	FM8	37	50	75,0	**Ø 277**	**NPT 6 - 8 (6" İçten - 8" Dıştan Pasolu 8 Diş)** NPT 6 - 8 (6" Inside - 8" Outside Threaded 8 TPI)	788	97	**[H] Basma Yüksekliği** / Total Manometric Head [m]	63	53	44	36	34	32	29	27	24	21
FDP 10885 / 2A	FM8	55	75	109,0			1014	131		94	80	67	54	51	47	44	40	36	31
FDP 10885 / 02	FM8	75	100	145,0			1014	131		125	106	89	72	68	63	58	53	48	41
FDP 10885 / 3A	FM8	92	125	179,0			1240	164		156	133	111	90	85	79	73	66	59	51
FDP 10885 / 03	FM10	110	150	205,0			1240	164		188	159	133	108	102	95	87	80	71	62
FDP 10885 / 4A	FM10	129	175	238,0			1466	198		219	186	155	126	118	110	102	93	83	72
FDP 10885 / 04	FM10	147	200	277,0			1466	198		250	213	178	144	135	126	116	106	95	82
FDP 10885 / 5A	FM10	166	225	309,0			1692	231		281	239	200	163	152	142	131	120	107	93
FDP 10885 / 05	FM10	185	250	349,0			1692	231		313	266	222	181	169	158	146	133	119	103
FDP 10885 / 6A	FM12	200	275	383,0			1918	265		344	292	244	199	186	174	160	146	131	113
FDP 10885 / 06	FM12	220	300	420,0			1918	265		375	319	266	217	203	189	175	159	143	124
FDP 10885 / 7A	FM12	240	325	464,0			2144	298		406	346	288	235	220	205	189	173	154	134
FDP 10885 / 07	FM12	260	350	502,0			2144	298		438	372	311	253	237	221	204	186	166	144
FDP 10885 / 8A	FM12	300	400	542,0			2370	332		469	399	333	271	254	237	218	199	178	154
FDP 10885 / 08	FM12	300	400	542,0			2370	332		500	425	355	289	271	252	233	212	190	165
FDP 10885 / 9A	FM12	340	450	627,0			2596	365		532	452	377	307	288	268	247	226	202	175
FDP 10885 / 09	FM12	340	450	627,0			2596	365		563	478	399	325	305	284	262	239	214	185
FDP 10885 / 10	FM12	380	500	709,0			2822	399		625	532	444	361	338	316	291	266	238	206

Dökme Demir Fan - Difüzör / Cast Iron Impeller - Diffuser

Performans Toleransları / Performance Tolerances : EN ISO 9906

Çalışma Koşulları
Working Conditions

Çalışma Gerilimi / Operating Voltage	: 3 x 230V - 380V - 460V (- %10 / +%10)
Frekans / Frequency	: 60 Hz
Maks. Su Sıcaklığı / Max. Water Temp.	: 40 °C
Maks. Kum Miktarı / Max. Sand Amount	: 50 g / m³
Dönüş Yönü / Rotation	: Saatin Tersi Yönünde / Counterclockwise
Dönüş Hızı / Rotational Speed	: 3450 rpm
Mil Çapı / Shaft Diameter	: Ø 45 mm
Mil Ucu / Shaft End	: NEMA Stadardına Uygun / According to NEMA Standard

Performans Parametreleri
Performance Parameters

Atmosferik Basınç / Atmospheric Pressure	: 1 Bar
Su Sıcaklığı / Water Temp.	: 15 °C
Kinematik Viskozite / Kinematic Viscosity	: 1 mm² / s
Özgül Yoğunluk / Specific Density	: 1000 kg / m³
Servis Faktörü / Service Factor (S.F.)	: 1,15

6"- 7" Motor / 3 X 460 V - 60 Hz - 2 Poles

Motor Tipi Motor Type	Motor Gücü Motor Power [S.F.=1,15]			Voltaj Voltage	Devir Rotational Speed	Nominal Akım Nominal Current	Verim Efficiency [η %]			Güç Faktörü Power Factor [Cos Ø]		
	P_N		P_{max}	U_N	n_N	I_N	% load			% load		
	[kW]	[HP]	[kW]	[V]	[rpm]	[A]	50 %	75 %	100 %	50 %	75 %	100 %
FM6	3	4	3,4	460	3520	7,0	74,0	76,0	76,0	0,64	0,75	0,81
FM6	4,5	6	5,2	460	3520	10,5	74,0	76,0	76,0	0,64	0,75	0,81
FM6	5,5	7,5	6,3	460	3480	12,9	74,0	77,0	77,0	0,63	0,74	0,80
FM6	7,5	10	8,6	460	3470	17,2	75,0	78,0	78,0	0,66	0,76	0,81
FM6	9,3	12,5	10,7	460	3460	20,8	78,0	80,0	80,0	0,66	0,77	0,81
FM6	11	15	12,7	460	3480	25,0	78,0	81,0	80,0	0,65	0,74	0,80
FM6	13	17,5	14,9	460	3490	29,0	78,0	81,0	81,0	0,63	0,74	0,80
FM6	15	20	17,3	460	3490	32,1	80,0	83,0	83,0	0,65	0,75	0,81
FM6	18,5	25	21,3	460	3480	40,6	80,0	82,0	82,0	0,64	0,75	0,80
FM6	22	30	25,3	460	3500	47,1	83,0	84,0	84,0	0,70	0,77	0,80
FM6	26	35	29,9	460	3500	55,7	83,0	85,0	85,0	0,60	0,72	0,80
FM6	30	40	34,5	460	3500	64,4	81,0	84,0	84,0	0,62	0,73	0,80
FM6	37	50	42,6	460	3500	79,1	82,0	84,0	85,0	0,62	0,74	0,80
FM6	45	60	51,8	460	3515	96,8	82,0	84,0	84,0	0,62	0,74	0,80
FM7	22	30	25,3	460	3494	46,0	82,0	84,1	84,0	0,76	0,81	0,83
FM7	26	35	29,9	460	3494	54,0	82,0	84,1	84,0	0,76	0,81	0,83
FM7	30	40	34,5	460	3498	62,7	82,0	84,1	84,0	0,75	0,80	0,82
FM7	37	50	42,6	460	3474	77,4	83,6	85,1	85,0	0,72	0,79	0,82
FM7	45	60	51,8	460	3490	94,1	83,7	84,3	84,0	0,72	0,79	0,82
FM7	52	70	59,8	460	3490	109,0	83,7	84,3	84,0	0,72	0,79	0,82
FM7	55	75	63,3	460	3466	115,0	83,1	84,3	84,0	0,72	0,79	0,82
FM7	60	80	69,0	460	3478	127,0	82,7	84,2	84,0	0,72	0,79	0,82
FM7	63	85	72,5	460	3478	131,7	82,7	84,2	84,0	0,72	0,79	0,82
FM7	67	90	77,1	460	3478	141,2	82,7	84,2	84,0	0,72	0,79	0,82

8" Motor / 3 X 460 V - 60 Hz - 2 Poles

Motor Tipi Motor Type	Motor Gücü Motor Power [S.F.=1,15]			Voltaj Voltage	Devir Rotational Speed	Nominal Akım Nominal Current	Verim Efficiency [η %]			Güç Faktörü Power Factor [Cos Ø]		
	P_N		P_{max}	U_N	n_N	I_N	% load			% load		
	[kW]	[HP]	[kW]	[V]	[rpm]	[A]	50 %	75 %	100 %	50 %	75 %	100 %
FM8	22	30	25,3	460	3490	44,0	81,0	83,1	83,0	0,80	0,85	0,87
FM8	30	40	34,5	460	3490	61,0	81,5	83,6	83,5	0,78	0,83	0,85
FM8	37	50	42,6	460	3490	75,0	83,8	85,3	84,8	0,75	0,82	0,85
FM8	45	60	51,8	460	3500	89,0	85,0	86,6	86,3	0,75	0,82	0,85
FM8	52	70	59,8	460	3510	102,0	85,0	86,6	86,3	0,75	0,82	0,85
FM8	55	75	63,3	460	3510	109,0	85,8	87,1	86,7	0,74	0,81	0,84
FM8	60	80	69,0	460	3510	116,0	86,1	87,6	87,4	0,75	0,82	0,85
FM8	63	85	72,5	460	3510	122,0	86,1	87,6	87,4	0,75	0,82	0,85
FM8	67	90	77,1	460	3510	130,0	86,1	87,6	87,4	0,75	0,82	0,85
FM8	70	95	80,5	460	3510	136,0	86,1	87,6	87,2	0,75	0,82	0,85
FM8	75	100	86,3	460	3510	145,0	86,3	87,8	87,4	0,75	0,83	0,86
FM8	81	110	93,2	460	3510	157,0	86,5	87,9	87,7	0,74	0,82	0,85
FM8	92	125	105,8	460	3510	179,0	86,7	88,3	88,3	0,75	0,81	0,84
FM8	110	150	126,5	460	3510	212,0	86,7	88,3	88,3	0,74	0,81	0,85

9" Motor / 3 X 460 V - 60 Hz - 2 Poles

Motor Tipi Motor Type	Motor Gücü Motor Power [S.F.=1,15]			Voltaj Voltage	Devir Rotational Speed	Nominal Akım Nominal Current	Verim Efficiency [η %]			Güç Faktörü Power Factor [Cos Ø]		
	P_N		P_{max}	U_N	n_N	I_N	% load			% load		
	[kW]	[HP]	[kW]	[V]	[rpm]	[A]	50 %	75 %	100 %	50 %	75 %	100 %
FM9	75	100	86,3	460	3485	145,0	85,0	86,0	85,0	0,83	0,86	0,88
FM9	81	110	93,2	460	3487	157,0	86,0	87,0	86,0	0,82	0,85	0,87
FM9	92	125	105,8	460	3488	176,0	86,0	87,0	86,0	0,84	0,86	0,88
FM9	110	150	126,5	460	3490	208,0	87,0	88,0	87,0	0,84	0,86	0,88
FM9	129	175	148,4	460	3491	241,0	87,0	88,0	88,0	0,84	0,86	0,88

10" Motor / 3 X 460 V - 60 Hz - 2 Poles

Motor Tipi Motor Type	Motor Gücü Motor Power [S.F.=1,15]			Voltaj Voltage	Devir Rotational Speed	Nominal Akım Nominal Current	Verim Efficiency [η %]			Güç Faktörü Power Factor [Cos Ø]		
	P_N		P_{max}	U_N	n_N	I_N	% load			% load		
	[kW]	[HP]	[kW]	[V]	[rpm]	[A]	50 %	75 %	100 %	50 %	75 %	100 %
FM10	75	100	86,3	460	3485	145,0	85,0	86,0	85,0	0,83	0,86	0,88
FM10	81	110	93,2	460	3487	155,0	86,0	87,0	86,0	0,83	0,86	0,88
FM10	92	125	105,8	460	3488	174,0	86,0	87,0	86,0	0,85	0,87	0,89
FM10	110	150	126,5	460	3490	205,0	87,0	88,0	87,0	0,85	0,87	0,89
FM10	129	175	148,4	460	3491	238,0	87,0	88,0	88,0	0,85	0,87	0,89
FM10	147	200	169,1	460	3493	277,0	87,0	88,0	87,0	0,81	0,84	0,88
FM10	166	225	190,9	460	3493	309,0	87,0	88,0	88,0	0,82	0,87	0,88
FM10	185	250	212,8	460	3494	349,0	86,0	88,0	87,0	0,82	0,87	0,88

12" Motor / 3 X 460 V - 60 Hz - 2 Poles

Motor Tipi Motor Type	Motor Gücü Motor Power [S.F.=1,15]			Voltaj Voltage	Devir Rotational Speed	Nominal Akım Nominal Current	Verim Efficiency [η %]			Güç Faktörü Power Factor [Cos Ø]		
	P_N		P_{max}	U_N	n_N	I_N	% load			% load		
	[kW]	[HP]	[kW]	[V]	[rpm]	[A]	50 %	75 %	100 %	50 %	75 %	100 %
FM12	147	200	169,1	460	3530	281,0	88,0	89,0	89,0	0,81	0,84	0,85
FM12	166	225	190,9	460	3525	317,0	88,0	89,0	89,0	0,81	0,84	0,85
FM12	185	250	212,8	460	3530	353,0	88,0	89,0	89,0	0,81	0,84	0,85
FM12	200	275	230,0	460	3525	383,0	88,0	89,0	89,0	0,81	0,84	0,85
FM12	220	300	253,0	460	3530	420,0	88,0	89,0	89,0	0,81	0,84	0,85
FM12	240	325	276,0	460	3525	464,0	88,0	89,0	89,0	0,81	0,84	0,84
FM12	260	350	299,0	460	3520	502,0	88,0	89,0	89,0	0,81	0,84	0,84
FM12	300	400	345,0	460	3520	542,0	88,0	89,0	90,0	0,85	0,89	0,89
FM12	340	450	391,0	460	3520	627,0	88,0	89,0	89,0	0,83	0,87	0,88
FM12	380	500	437,0	460	3520	709,0	89,0	89,0	89,0	0,84	0,87	0,87

Kablo Seçim Tablosu
Cable Selection Table

Direkt Yol Verme (D.O.L.) • Direct Starting (D.O.L.)

460 V - 60 Hz

İzin Verilen Max. Besleme Kablo Uzunluğu (m) / Max. Permitted Length of Feeding Cables (m)																**30 ° C**	
Motor Gücü Motor Power		**Kablo Kesiti 3x... (mm²) /** Cable Cross-Section 3x...(mm²)															
kW	**HP**	**1.5**	**2.5**	**4**	**6**	**10**	**16**	**25**	**35**	**50**	**70**	**95**	**120**	**150**	**185**	**240**	**300**
3	4	99	162	263	387	677											
4,5	6	83	138	220	330	552											
5,5	7,5	62	104	168	251	419	669										
7,5	10	50	83	133	199	333	532										
9,3	12,5		67	108	162	271	432	675									
11	15		58	93	141	234	373	581									
13	17,5			78	118	197	314	490	685								
15	20			69	105	175	279	436	611								
18,5	25				83	138	222	346	482	688							
22	30				71	119	191	297	415	591							
26	35					99	159	247	345	489	682						
30	40					88	142	220	308	437	610						
37	50						113	176	247	353	493	667					
45	60						95	148	205	293	409	551	693				
55	75							119	166	237	330	447	560	696			
63	85							108	156	226	311	426	533	670			
70	95								133	198	269	372	456	582	714		
75	100								122	175	244	331	416	518	639		
81	110									165	231	314	395	494	612	791	
92	125									149	208	282	359	452	556	729	
110	150										170	247	300	388	454	628	791
129	175										147	203	266	334	399	540	681
147	200				**ISINMA SINIRI**							178	229	288	349	465	586
166	225				HEATING LIMIT							154	198	245	293	379	467
185	250												177	220	265	339	418
200	275												162	200	242	311	381
220	300													185	224	291	359
240	325													172	206	268	334
260	350														187	241	295
300	400														179	236	295
340	450															206	262
380	500															178	224

Direkt Yol Verme (D.O.L.) • Direct Starting (D.O.L.)

1000 V - 60 Hz

İzin Verilen Max. Besleme Kablo Uzunluğu (m) / Max. Permitted Length of Feeding Cables (m)																**30 ° C**	
Motor Gücü Motor Power		**Kablo Kesiti 3x... (mm²) /** Cable Cross-Section 3x...(mm²)															
kW	**HP**	**1.5**	**2.5**	**4**	**6**	**10**	**16**	**25**	**35**	**50**	**70**	**95**	**120**	**150**	**185**	**240**	**300**
147	200								313	454	619						
166	225								276	401	547	734					
185	250								249	362	493	661	826				
200	275								229	333	454	609	760				
220	300				**ISINMA SINIRI**				209	303	414	555	693	846			
240	325				HEATING LIMIT				191	277	376	504	627	763			
260	350								176	255	347	464	578	703	814		
300	400								157	230	317	430	543	671	787		
340	450								137	200	275	371	468	576	674	960	
380	500								122	178	243	328	412	506	590	833	

- **Tablodaki değerler bakır kesitli kablolar için hesaplanmıştır.**
- **Müsaade edilen kablo uzunlukları % 3 gerilim düşümüne göre hesaplanmıştır.**
- **Yıldız-üçgen yol vermeli motorlar için kablo uzunluğu, yukarıda ki tabloda ilgili kablo uzunluğunun √3 ile çarpılmasıyla hesaplanabilir.**

- The values in the table are calculated for copper cross section cables.
- Permitted cable lengths are calculated according to % 3 voltage drop.
- For motors with star-delta starting, the cable length can be calculated by multiplying the relevant cable length from the above table by √3.

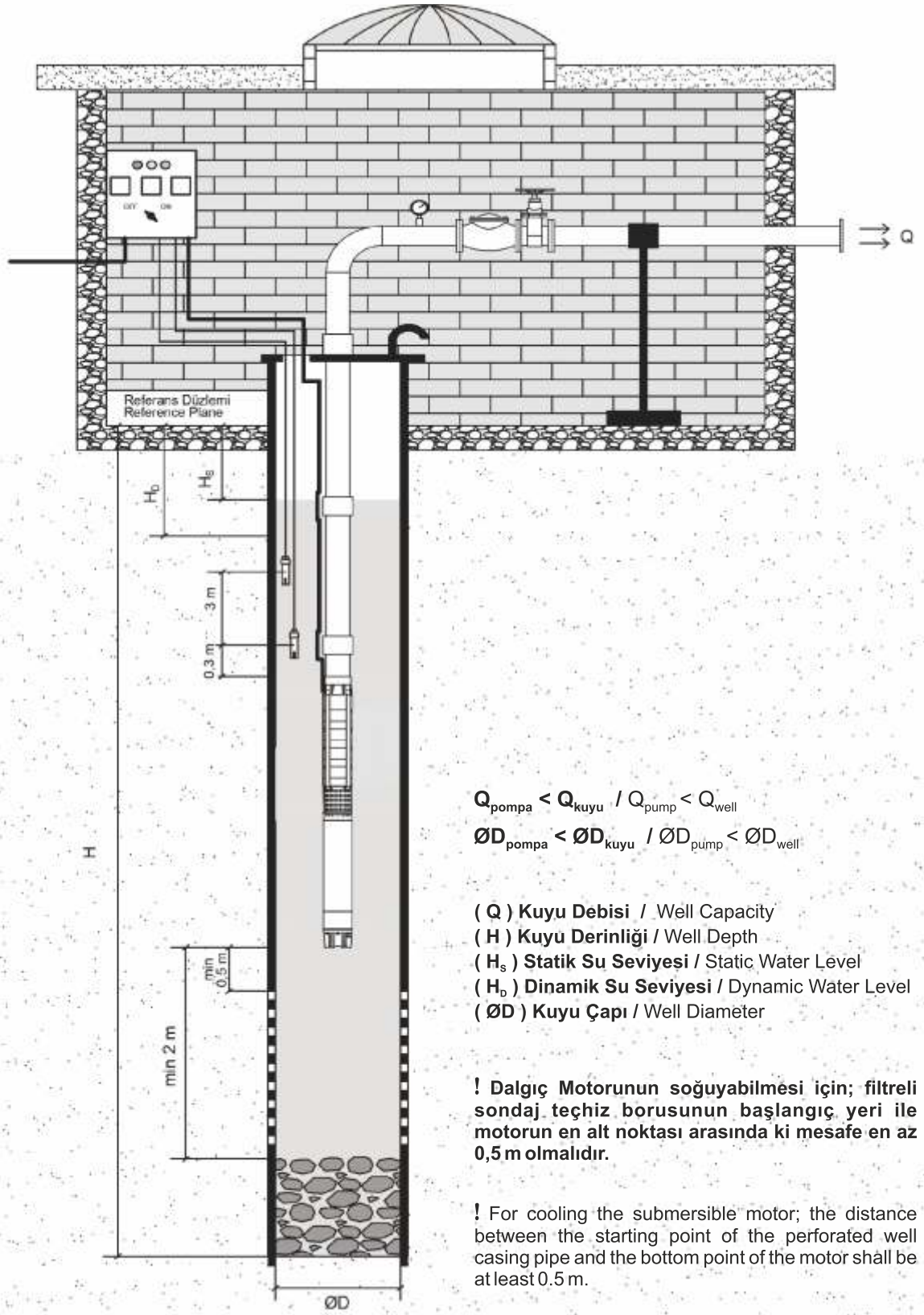
Jeneratör Seçim Tablosu
Generator Selection Table

Motor Gücü Motor Power		**Tavsiye Edilen Minimum Jeneratör Güçleri /** Recommended Minimum Generator Powers							
		Direkt Yol Verme Direct Starting		**Yıldız-Üçgen Yol Verme** Star-Delta Starting		**Soft-Starter ile Yol Verme** Starting with Soft-Starter		**Inverter ile Yol Verme** Starting with Inverter	
kW	**HP**	**kW**	**kVA**	**kW**	**kVA**	**kW**	**kVA**	**kW**	**kVA**
3	4	8	10	6	8	6	8	5	7
4,5	6	10	13	8	10	9	12	7	10
5,5	7,5	13	16	11	14	11	14	9	11
7,5	10	15	19	14	18	15	18	12	15
9,3	12,5	19	24	17	22	18	22	15	19
11	15	23	28	21	26	21	26	17	21
13	17,5	26	33	24	30	24	31	20	26
15	20	30	38	27	34	28	34	23	29
18,5	25	40	50	33	42	34	44	29	37
22	30	45	57	40	50	40	51	33	42
26	35	52	65	45	57	47	59	39	49
30	40	60	75	52	65	54	69	45	57
37	50	75	94	65	81	67	85	56	71
45	60	90	112	77	97	79	94	65	78
55	75	120	150	102	128	95	114	80	95
63	85	-	-	-	-	109	130	91	109
70	95	-	-	-	-	122	143	101	119
75	100	-	-	-	-	130	153	108	127
81	110	-	-	-	-	143	164	119	137
92	125	-	-	-	-	162	187	135	156
110	150	-	-	-	-	192	218	160	182
129	175	-	-	-	-	221	257	184	214
147	200	-	-	-	-	253	295	211	246
166	225	-	-	-	-	286	329	239	274
185	250	-	-	-	-	315	371	263	309
200	275	-	-	-	-	345	401	287	334
220	300	-	-	-	-	379	441	316	368
240	325	-	-	-	-	414	487	345	406
260	350	-	-	-	-	443	515	369	429
300	400	-	-	-	-	511	581	426	484
340	450	-	-	-	-	586	666	489	555
380	500	-	-	-	-	640	736	534	613

- **Motoru beslemek için bir elektrik jeneratörünün kullanılması gerektiğinde, dikkatli bir seçim yapılmalıdır.**
- **Yukarıda ki tabloda motoru beslemek için kullanılacak olan jeneratörün minimum kW ve kVA değerlerini içeren bir çizelge verilmiştir.**

- When an electric generator has to be used to supply the motor, it should be carefully selected.
- A chart is provided giving the minimum rating in kW and kVA of the generators used to supply the motors.

Kuyu Montaj Şeması
Installation Example in Well



$Q_{pompa} < Q_{kuyu}$ / $Q_{pump} < Q_{well}$

$ØD_{pompa} < ØD_{kuyu}$ / $ØD_{pump} < ØD_{well}$

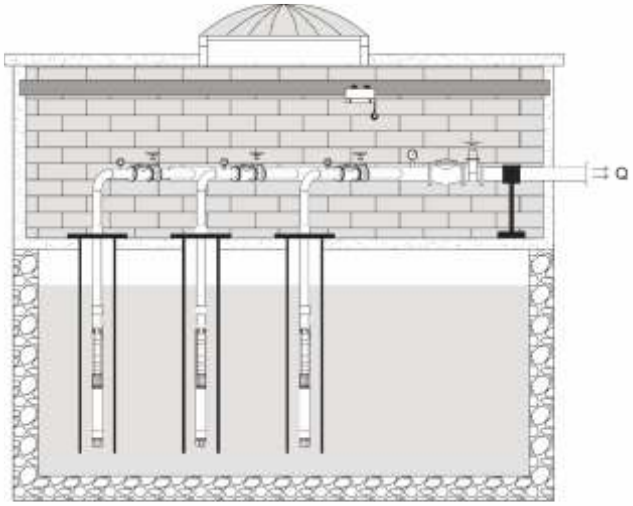
(Q) Kuyu Debisi / Well Capacity
(H) Kuyu Derinliği / Well Depth
(H_s) Statik Su Seviyesi / Static Water Level
(H_D) Dinamik Su Seviyesi / Dynamic Water Level
(ØD) Kuyu Çapı / Well Diameter

! Dalgıç Motorunun soğuyabilmesi için; filtreli sondaj teçhiz borusunun başlangıç yeri ile motorun en alt noktası arasında ki mesafe en az 0,5 m olmalıdır.

! For cooling the submersible motor; the distance between the starting point of the perforated well casing pipe and the bottom point of the motor shall be at least 0.5 m.

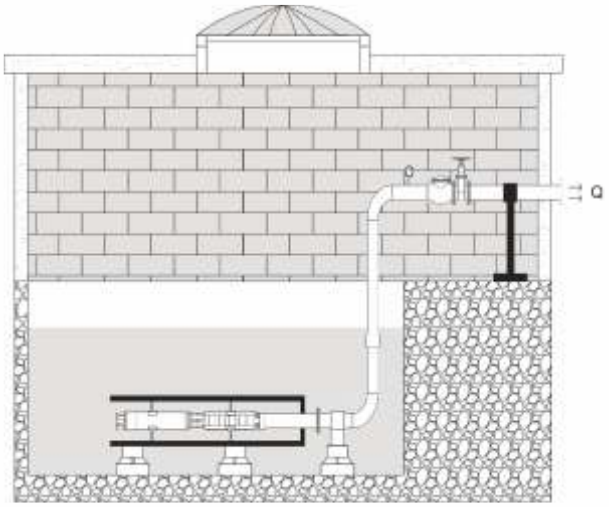
EN ISO **9001** CE TS 11146 POMSAD Europump Member of Europump

Kuyu Montaj Şeması
Installation Example in Well



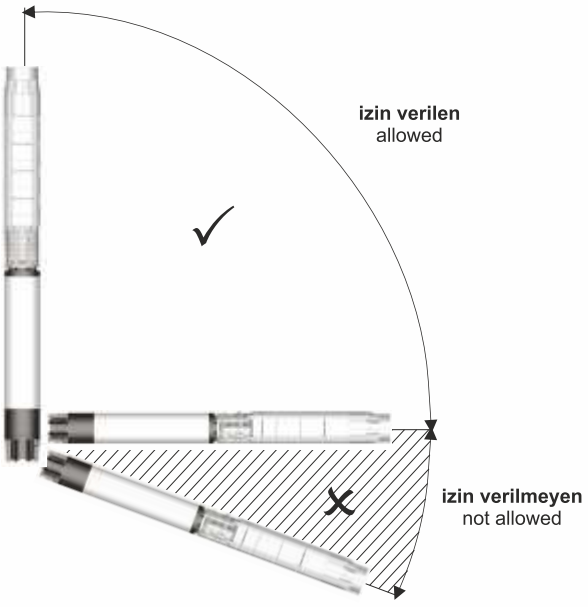
Yüksek debilere ihtiyaç duyulduğunda, birden fazla dalgıç pompanın paralel biçimde bağlanması şekilde gösterilmiştir.

When high capacities are required, the connection of several submersible pumps in parallel is shown in the figure.



Dalgıç pompanın kuyuya yatay şekilde monte edilmesi şekilde gösterilmiştir.

The horizontal installation of the submersible pump in the well is shown in the figure



Dalgıç pompanın izin verilen montaj konumları şekilde gösterilmiştir. Basma ağzı asla yatay düzlemin altına düşmemelidir.

The permissible mounting position of the submersible pump are shown in the figure. The discharge port should never fall below the horizontal plane.

HİDROLİK TESİSAT EKİPMANLARI

Vana
• Kuyuda ki mevcut debi ile dalgıç pompanın debisini uyumlu hale getirmek için vana kullanılmalıdır.

• Vananın kısılma oranı pompanın yüklenmesini etkilemektedir.

• Dalgıç pompa kapalı vana konumunda 5 dakikadan fazla çalıştırılmamalıdır.

Çek-Valf
• Terfi hattı üzerinde kuyu başında, pompa ile vana arasında harici bir çek-valf kullanılması ve terfi hattı boyunca her 200 metrede bir tekrarlanması tavsiye edilir.

Manometre
• Dönüş yönü kontrolü amacıyla vana önünde mutlaka manometre olmalıdır. Bu manometrenin ölçüm değeri pompanın maksimum basıncına eşit veya daha büyük olmalıdır.

Kolon Borusu
• Dalgıç pompayı taşır ve suyun yeryüzüne ulaşmasını sağlar.

• Pompalanan debiye uygun çapta ve mukavemette seçilmelidir.

Terfi Hattı
• Uzun terfi hatları, doğrudan yağmurlama, doğrudan damlama gibi yüksek basınca ihtiyaç duyulan tesislerde su darbesi olasılığı yüksektir.

• Su darbesi pompanın ani durması sonucu oluşmaktadır. Ani durmaya elektrik kesilmeleri veya kuyuda ki su seviyesinin düşük olması sebep olmaktadır.

• Su darbesi, motorun eksenel yatağına yüklenerek aşırı yüke maruz kalmasına yol açmaktadır.

• Su darbesinin etkisinin önlenmesi için pompada dâhili çek-valf mevcut olmalıdır. Ayrıca kuyu başında da harici çek-valf, darbe önleyici vana ve hava kazanı kullanılmalıdır.

• Terfi hatlarında kullanılacak standart boru çapları için izin verilen debi aralıkları aşağıdaki tabloda gösterilmiştir.

HYDRAULIC INSTALLATION EQUIPMENT

Valve
• The valve should be used to match the flow rate of the submersible pump to the flow in the well.

• The closure ratio of the valve affects the loading of the pump.

• The submersible pump must not be operated for more than 5 minutes in the closed valve position.

Check Valve
• It is recommended that an external check valve be used between the pump and the valve at the head of the well on the force main and repeated every 200 meters along the force main.

Manometer
• There must be a manometer in front of the valve for the direction of rotation control. The measured value of this manometer must be equal to or greater than the maximum pressure of the pump.

Column Pipe
• The column pipe carries the submersible pump.

• It should be selected in diameter and strength suitable for the pumped flow rate.

Force Main
• Long force mains; direct sprinkler, direct drip irrigation such as high pressure is required, the possibility of water hammer is also high.

• Water hammer occurs as a result of sudden stop of the pump. The sudden stop is caused by power cuts or low water level in the well.

• The water hammer is loaded onto the axial thrust bearing of the motor, causing the motor to overload.

• The pump must have an internal check valve to prevent the impact of the water hammer. In addition, an external check-valve, anti-impact valve and air chamber should be used at the well head.

• The permissible flow ranges for the standard pipe diameters to be used in the force mains are shown in the table below.

Nominal Boru Çapı Nominal Pipe Diameter	**DN50 2"**	**DN80 3"**	**DN100 4"**	**DN125 5"**	**DN150 6"**	**DN200 8"**	**DN250 10"**	**DN300 12"**	**DN350 14"**
[l/s]	2 - 5	5 - 11	11 - 19	19 - 30	30 - 41	41 - 71	71 - 121	121 - 171	171 - 250
[m³/h]	7 - 18	18 - 40	40 - 68	68 - 108	108 - 148	148 - 256	256 - 436	436 - 616	616 - 900

KUYU VE SU İLE İLGİLİ ŞARTLAR

• Standart dalgıç motorları, 30 °C sıcaklıkta ki sularda çalıştırılmak üzere tasarlanmıştır.

FERAT, özel malzemeler kullanarak 70 °C sıcaklıkta ki sularda çalışabilen dalgıç motorlar üretebilmektedir.

• Dalgıç motor, kuyu dışında ve susuz ortamda asla çalıştırılmamalıdır.

Göl, havuz, depo gibi durgun suların mevcut olduğu yerlerde; motorun dış yüzeyinde 0,2 – 0,5 m/s hızla su akışı sağlayacak soğutma ceketi monte edilmelidir.

• Standartlara göre kuyu suyu içinde izin verilen maksimum kum miktarı 50 g/m³ tür.

Kuyu suyunda ki kum miktarı kontrol edilmeli ve izin verilenden fazla olması durumunda kuyu temizlenmelidir.

• Kuyunun her mevsim için dinamik-statik su seviyeleri ve debileri belirlenmelidir.

Bunun için sondaj kuyularının açılması esnasında karşılaşılan tüm olguların ve uygulanılan tüm işlemlerin yer aldığı kuyu künyelerinden faydalanılmalıdır. Kuyu künyeleri pompa tipi seçiminde ve zaman içinde meydana gelebilecek sorunların nedenleri ve çözümleri hakkında doğru kararlar alınmasına yardımcı olur.

WELL AND WATER CONDITIONS

• Standard submersible motors are designed for operation in water at 30 °C.

FERAT is able to produce submersible motors capable of operating in water at 70 °C temperature by using special materials.

• The submersible motor must never be operated outside the well and without water.

In places where stagnant waters such as lakes, pools and reservoirs exist; A cooling jacket should be installed on the outer surface of the engine to provide water flow at a rate of 0,2 – 0,5 m/s.

• According to the standards, the maximum amount of sand allowed in the well water is 50 g/m³.

The amount of sand in the well water should be checked and if it is more than allowed, the well should be cleaned.

• Dynamic-static water levels and flow rates of the well should be determined for each season.

For this, the well masthead containing all the cases encountered during the drilling of wells and all the procedures applied should be utilized. Well mastheads help to make the right decisions about pump type selection and the causes and solutions of problems that may occur over time.

POMPA MONTAJ DERİNLİĞİ

• Motor kuyu dibinden minimum 2 metre yukarıda olmalıdır. Motor, kuyu dibinde birikmiş kum ve çamur gibi ortamlara monte edilmemelidir. Bu birikintiler motor etrafında ki su akışını engelleyerek motorun aşırı ısınmasına yol açar.

• Pompanın kuyu montaj derinliği belirlenirken, mevsimlere göre statik ve dinamik su seviyesinin değiştiği göz önüne alınmalıdır. Ayrıca sulama mevsimi içerisinde, çevresinde çalışan kuyuların birbirilerini etkilediği dolayısıyla su seviyelerinin düşebileceğini hesaba katmalıyız. Bu durumda pompa montaj derinliği belirlenirken, dinamik seviyenin inebileceği minimum seviye hesaba katılmalıdır. Pompanın monte edileceği emniyetli derinlik belirlenirken gerekli NPSH değerleri göz önüne alınmalıdır. Gerekli NPSH değerleri pompanın tasarımına ve debisine göre değişiklikler gösterir.

• Kuyu debisinin azaldığı, pompanın otomatik start-stop zamanının sıklaşması ile anlaşılır. Bu durumda pompa debisi bir vana yardımı ile ayarlanmalı ve bir saatteki maksimum yol verme sayısı aşılmamalıdır.

• Pompa, çok kısa bir süre olsa dahi susuz çalıştırılmamalıdır. Pompa emiş haznesinin üzerinde her zaman emniyetli bir su yüksekliği bulunmalıdır. Emniyetli su yüksekliği, pompanın titreşimsiz çalışmasını sağlayarak motor yataklarının ve eksenel yatağın düzgün çalışmasını sağlar. Emniyetli su yüksekliğinin sağlandığından emin olmak için mutlaka su seviye elektrodu kullanılmalıdır.

PUMP ASSEMBLY DEPTH

• The motor must be at least 2 meters above the bottom of the well. The motor should not be installed in environments such as sand and mud accumulated at the bottom of the well. These accumulations prevent the flow of water around the motor and cause the motor to overheat.

• When determining the well installation depth of the pump, it should be taken into consideration that the static and dynamic water level changes according to the seasons. We should also take into consider that during the irrigation season, wells running around affect each other and therefore water levels may fall. In this case, when determining the pump installation depth, the minimum level at which the dynamic level can be lowered must be taken into consider. The required NPSH values should be considered when determining the safe depth at which the pump will be installed. The required NPSH values vary according to the design and flow rate of the pump.

• The well flow rate is reduced by the be more often in the automatic start-stop time of the pump. In this case, the pump flow rate must be adjusted by means of a valve and the maximum number of starting per hour must not be exceeded.

• The pump must not be operated without water even for a short period of time. There must always be a safe water height above the pump suction chamber. The safe water height ensures smooth operation of the motor bearings and the axial bearing, ensuring that the pump operates without vibration. The water level electrodes must be used to ensure safe water height.

SOĞUTMA CEKETİ KULLANIMI

Dalgıç pompalar sondaj kuyularının yanı sıra göl, baraj, havuz ve su depoları gibi durgun suların mevcut olduğu yerlerde, farklı koşullar altında çalışırlar. Her çeşit motorda olduğu gibi dalgıç motorlarda da pompa mili için gereken gücün üretimi esnasında motor üzerinde ısı fazlalığı açığa çıkar ve bu ısının, motorun sağlıklı çalışmasına engel olmaması için tahliye edilmesi gerekir.

Soğutma işlemi, dalgıç motorlarının su içerisinde çalışmasından dolayı ortamda ki basınçlandırılacak olan su, dalgıç motor yüzeyinden konveksiyon akımı ile geçirilerek sağlanır.

Eğer bir sondaj kuyusunda, sondaj kuyusuna ait teçhiz borusu çapı dalgıç motor çapından çok geniş veya su temini geniş bir hazneden elde ediliyor ise; dalgıç motorunun soğumasını sağlayan konveksiyon akımının hızı motoru soğutmaya yetmez ve dalgıç motorunun yanma riskini artırır. Dalgıç motoru yüzeyinde ki su hızının minimum 0,15 m/s ve maksimum 3 m/s olması gerekmektedir.

Yapılan testler göstermiştir ki, soğutma ceketleri motor ısısını yaklaşık 10 - 20 °C aralığında düşürebilmektedir. Bu hem motorun yanma riskini hem de motorun korozyona uğrama hızını düşürerek daha uzun bir kullanım ömrü sağlamaktadır.

Bu nedenle, soğutma ceketleri dalgıç motorlarda oluşan ısının suya transferi için mutlaka gerekli olan, düşük maliyetli ancak motorun çalışması bakımından hayati öneme sahip bir aksesuardır.

Soğutma için gerekli olan motor yüzeyindeki akış hızı, motor çapına ve gücüne göre değişiklik gösterir.

USE COOLING JACKET

Submersible pumps operate under different conditions where borehole is available, as well as stagnant water such as lakes, dams, pools and reservoirs. As in all types of motors, submersible motors also produce excess heat on the motor during the generate of the power required for the pump shaft and this heat must be evacuated in order not to interfere with the healthy operation of the engine.

The cooling process is ensured by passing the water to be pressurized from the submersible motor surface with convection current due to the operation of the submersible motors in water.If a borehole is provided, the fitting diameter of the borehole is too large from the submersible motor diameter or from a large reservoir of water supply; the speed of the convection current, which allows the submersible motor to cool, is not sufficient to cool the motor and increases the risk of burning of the submersible motor. The water velocity on the submersible motor surface must be a minimum of 0,15 m / s and a maximum of 3 m / s.

Tests have shown that the cooling jackets can reduce the motor temperature in the range of about 10-20 °C. This reduces the risk of burning of the submersible motor as well as the speed of corrosion of the submersible motor, resulting in a longer lifetime.

Therefore, the cooling jackets are a low-cost but essential accessory for the operation of the engine, which is absolutely necessary for the transfer of the heat generated in the submersible motors to the water.

The velocity of flow on the motor surface required for cooling varies according to the motor diameter and power.

Motor Tipi Motor Type	**Motor Gücü** Motor Power	**Min. Akış Hızı** Min. Flow Rate
6"	3 - 15 kW	0,2 m/s
	18,5 - 45 kW	0,5 m/s
7"	22 - 67 kW	0,2 m/s
8"	22 - 55 kW	0,2 m/s
	63 - 110 kW	0,5 m/s
9"	75 - 129 kW	0,5 m/s
10"	75 - 185 kW	0,5 m/s
12"	147 - 380 kW	0,5 m/s

Standart Kuyu Uygulaması

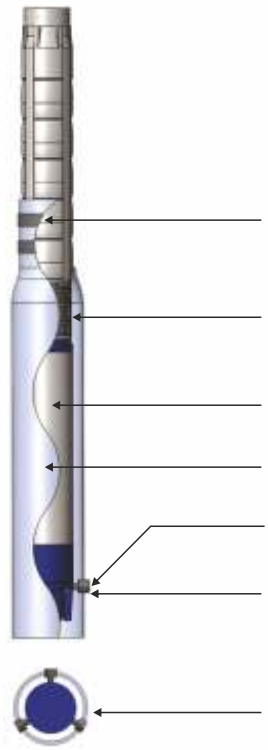
Standard Well Application

Göl, Baraj, Havuz ve Geniş Kuyu Uygulaması

Lake, Dam, Pool and Wide Well Application

Soğutma Ceketi Yapısı

Structure of Cooling Jacket



Paslanmaz Çelik Kelepçeler / Stainless Stell Clamps

Su Emiş Bölgesi / Intake

Dalgıç Motor / Submersible Motor

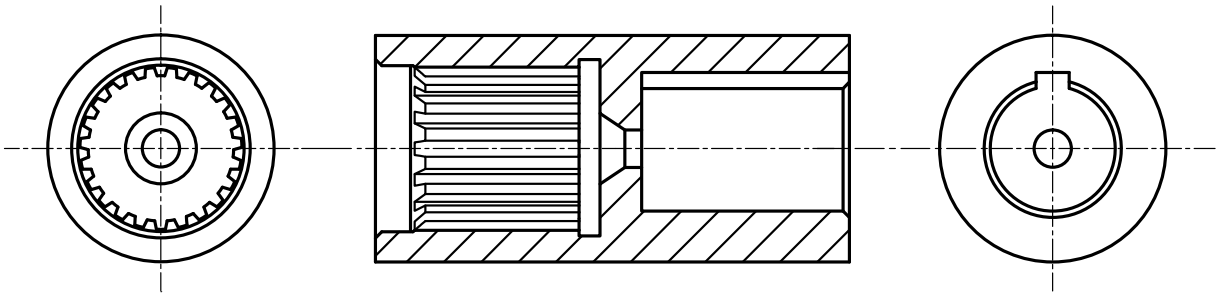
Soğutma Ceketi / Cooling Jacket

Merkezleme Civatası (3 adet) / Centering Bolt (3 pcs)

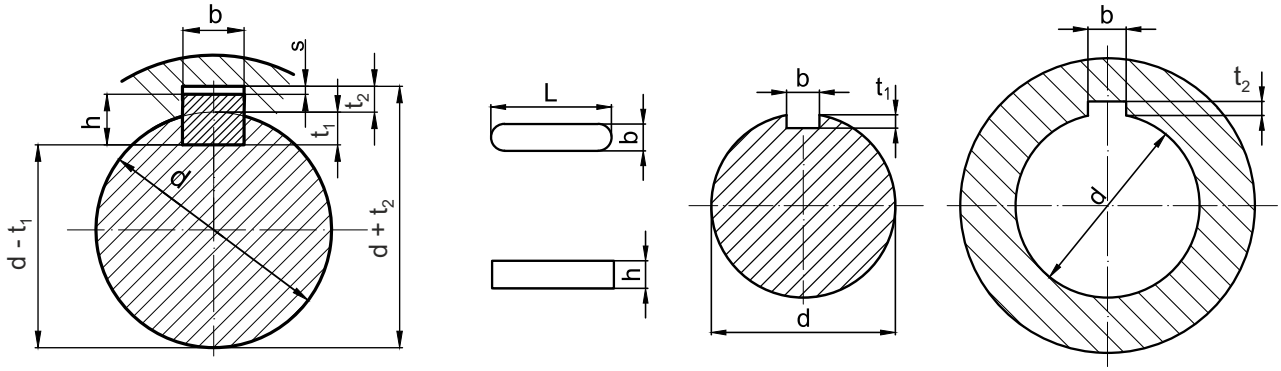
Merkezleme Civataları Döküm yüzey hızasına sıkılmalıdır.
Statör gövdesi hızasına sıkılmamalıdır.
Centering Bolt Must Located on Motor Casting.
Do not Located on Stator Shell.

Alt Görünüş / Bottom End View

Kaplinler / Couplings



Motor Shaft End	Pump Shaft End
Standards **ANSI B92.1 / NEMA MG 1**	Standards **DIN 6885 - A**

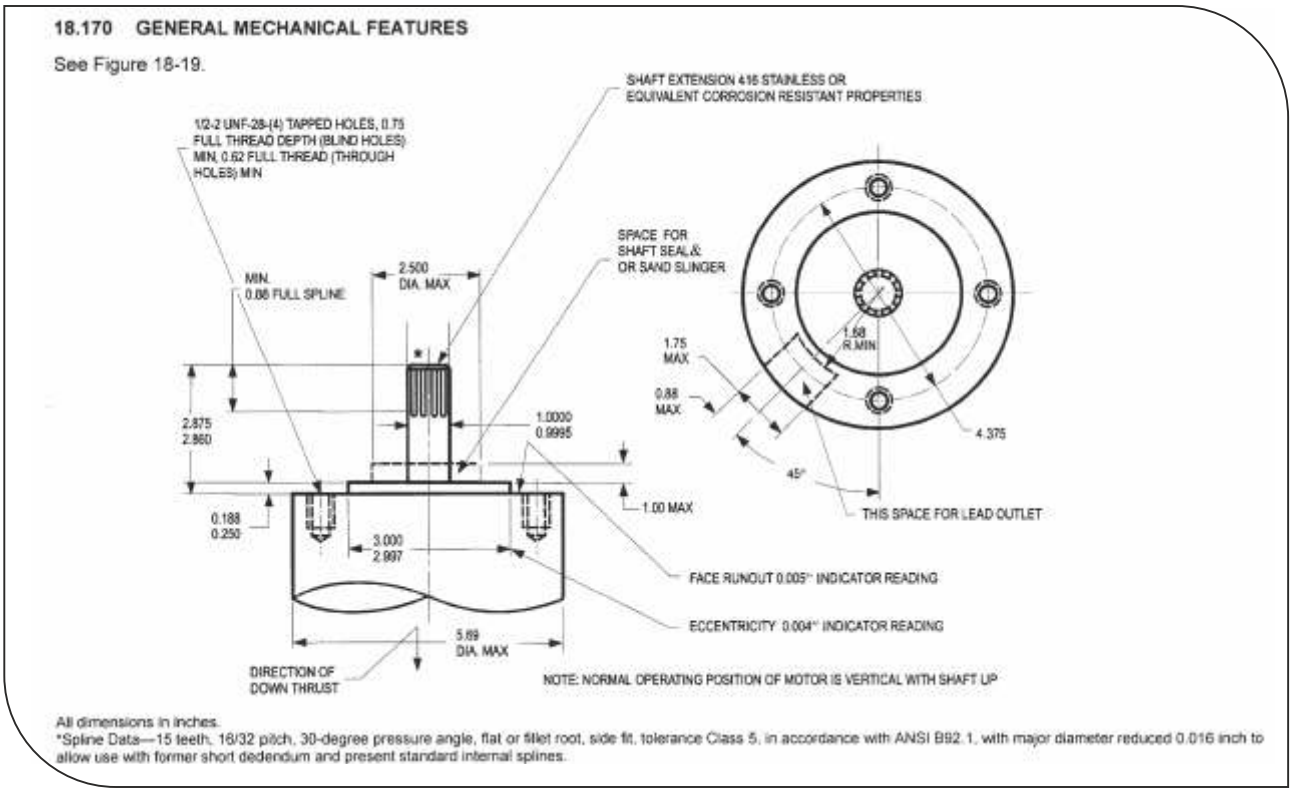


Motor / Pompa Kaplinler • Motor / Pump Couplings

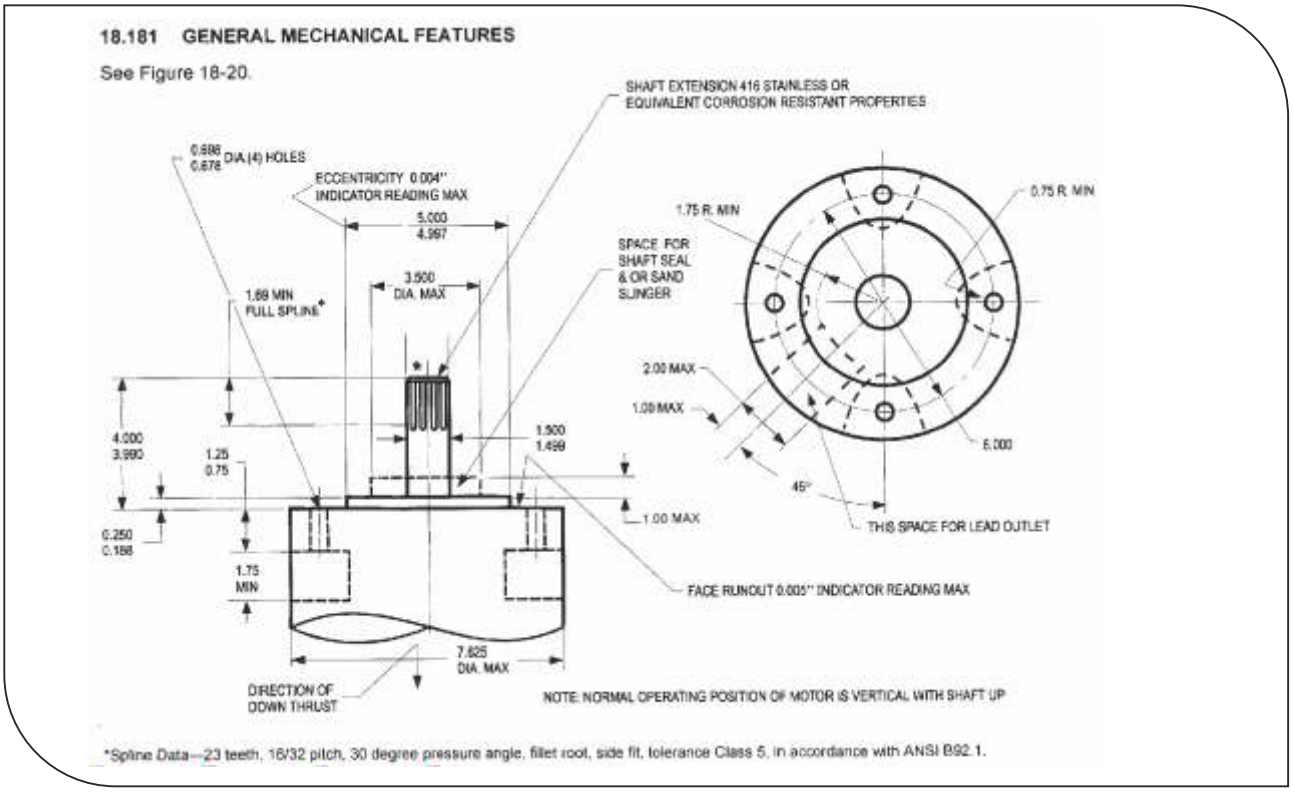
Motor **Mil Ucu Tipi** Motor Shaft End Type	**Pompa** Pump			**Kanal Derinliği** Keyway Depth				**Kaplin** Coupling		
	Mil Çapı Shaft Dia.	**Kama Boyutları** Key Size		**Mil** Shaft		**Kaplin** Coupling		**Çapı** Diameter	**Boyu** Length	**Malzeme** Material
	d	**b x h**	**L**	**t_1**	**d - t_1**	**t_2**	**d + t_2**			
6" NEMA Spline	Ø 18	6 x 6	40	3,5	14,5	2,8	20,8	Ø 40	90	AISI 420
6" NEMA Spline	Ø 20	6 x 6	40	3,5	16,5	2,8	22,8	Ø 40	90	AISI 420
6" NEMA Spline	Ø 22	6 x 6	40	3,5	18,5	2,8	24,8	Ø 40	90	AISI 420
6" NEMA Spline	Ø 25	8 x 7	50	4	21	3,3	28,3	Ø 40	102	AISI 420
8" NEMA Spline	Ø 22	6 x 6	40	3,5	18,5	2,8	24,8	Ø 55	102	AISI 420
8" NEMA Spline	Ø 25	8 x 7	50	4	21	3,3	28,3	Ø 55	114	AISI 420
8" NEMA Spline	Ø 28	8 x 7	50	4	24	3,3	31,3	Ø 55	114	AISI 420
8" NEMA Spline	Ø 30	8 x 7	50	4	26	3,3	33,3	Ø 55	114	AISI 420
8" NEMA Spline	Ø 32	10 x 8	50	5	27	3,3	35,3	Ø 60	114	AISI 420
8" NEMA Spline	Ø 35	10 x 8	50	5	30	3,3	38,3	Ø 60	114	AISI 420
8" NEMA Spline	Ø 45	14 x 9	60	5,5	39,5	3,8	48,8	Ø 70	120	AISI 420
12" Parallel with Key	Ø 32	10 x 8	60	5	27	3,3	35,3	Ø 88	145	AISI 420
12" Parallel with Key	Ø 35	10 x 8	60	5	30	3,3	38,3	Ø 88	145	AISI 420
12" Parallel with Key	Ø 45	14 x 9	60	5,5	39,5	3,8	48,8	Ø 88	145	AISI 420

Birim / Unit [mm]

Standart Ölçüler / Standard Dimensions



ANSI B92.1 / NEMA MG 1: Motors and Generators (6 - INCH)



ANSI B92.1 / NEMA MG 1: Motors and Generators (8 - INCH)

Standart Ölçüler / Standard Dimensions

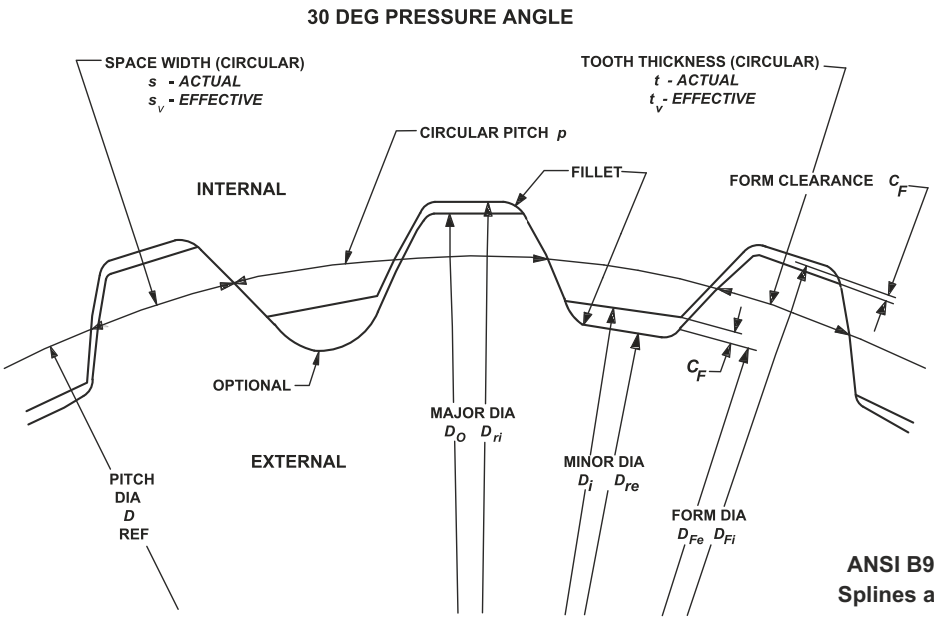


FIG. 5 - SPLINE TERMS, SYMBOLS AND DRAWING DATA, 30 DEG PRESSURE ANGLE, FLAT ROOT SIDE FIT

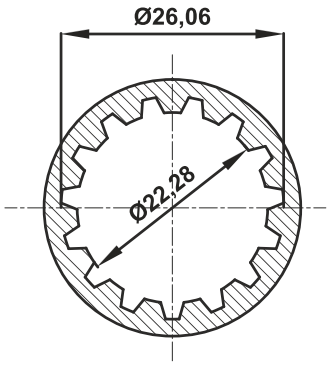
30 DEG PRESSURE ANGLE
TABLE 13 - 30 DEG PRESSURE ANGLE, FLAT ROOT SIDE FIT, 16/32 SPLINE PITCH

	Internal and External			Internal (see Drawing Data)		KAPLİNLER COUPLINGS				External (see Drawing Data)				MOTOR MİL UCU MOTOR SHAFT END		
	N	D	D_b	D_{ri}	D_{Fi}	D_i	S_v Min. Eff. Circ. Space Width = 0.0982 Notes c & d				t_v Max. Eff. Circ. Tooth Thickness = 0.0982 Notes c & d				D_O	D_{Fe}	D_{re}
	No. Of Teeth	Pitch Dia. REFERANS DİŞ ÇAPI	Base Dia.	Major Dia. Max. KAPLİN DİŞ DİBİ ÇAPI	Form Dia.	Minor Dia. KAPLİN DİŞ ÜSTÜ ÇAPI	S Max. Actual Circ. Space Width for Tolerance Class				t Min. Actual Circ. Tooth Thickness for Tolerance Class				Major Dia. ROTOR DİŞ ÜSTÜ ÇAPI	Form Dia.	Minor Dia. Min. ROTOR DİŞ DİBİ ÇAPI
							7	6	5	4	4	5	6	7			
							S_7	S_6	S_5	S_4	t_4	t_5	t_6	t_7			
	1	2	3.1	4.1	5.1	6.1	8.7	8.6	8.5	8.4	11.4	11.5	11.6	11.7	14.1	17.1	18.1
						Note e	Notes a & b								Note g	Note e	
	Tolerance in Ten Thousandths					+50 -0									+0 -220		
	6	0.3750000	0.3247594	0.463	0.442	0.339	0.1032	0.1017	0.1007	0.1000	0.0964	0.0957	0.0947	0.0932	0.437	0.334	0.278
	7	0.4375000	0.3788861	0.526	0.504	0.293	0.1033	0.1017	0.1007	0.1000	0.0964	0.0957	0.0947	0.0931	0.500	0.388	0.340
	8	0.5000000	0.4330127	0.588	0.567	0.449	0.1033	0.1018	0.1008	0.1000	0.0964	0.0957	0.0947	0.0931	0.562	0.444	0.403
	9	0.5625000	0.4871393	0.651	0.629	0.509	0.1033	0.1018	0.1008	0.1000	0.0964	0.0957	0.0947	0.0931	0.625	0.504	0.465
	10	0.6250000	0.5412659	0.713	0.692	0.570	0.1034	0.1018	0.1008	0.1000	0.0964	0.0957	0.0947	0.0930	0.687	0.565	0.528
	11	0.6875000	0.5953925	0.776	0.754	0.631	0.1034	0.1019	0.1008	0.1001	0.0963	0.0956	0.0945	0.0930	0.750	0.626	0.590
	12	0.7500000	0.6495191	0.838	0.817	0.692	0.1035	0.1019	0.1008	0.1001	0.0963	0.0956	0.0945	0.0929	0.812	0.647	0.653
	13	0.8125000	0.7036456	0.901	0.879	0.754	0.1035	0.1019	0.1008	0.1001	0.0963	0.0956	0.0945	0.0929	0.875	0.749	0.715
	14	0.8750000	0.7577722	0.963	0.942	0.815	0.1035	0.1019	0.1009	0.1001	0.0963	0.0955	0.0945	0.0929	0.937	0.810	0.777
6" NEMA	15	0.9375000	0.8118988	1.026	1.004	0.877	0.1036	0.1020	0.1009	0.1001	0.0963	0.0955	0.0944	0.0928	1.000	0.872	0.840
	16	1.000000	0.8660254	1.088	1.067	0.929	0.1036	0.1020	0.1009	0.1001	0.0963	0.0955	0.0944	0.0928	1.062	0.934	0.902
	17	1.062500	0.9201520	1.151	1.129	1.001	0.1036	0.1020	0.1009	0.1001	0.0963	0.0955	0.0944	0.0928	1.125	0.996	0.965
	18	1.125000	0.9742786	1.213	1.192	1.063	0.1037	0.1020	0.1009	0.1001	0.0963	0.0955	0.0944	0.0928	1.187	1.054	1.027
	19	1.187500	1.028405	1.276	1.254	1.125	0.1037	0.1021	0.1010	0.1002	0.0962	0.0954	0.0944	0.0928	1.250	1.121	1.090
	20	1.250000	1.082532	1.338	1.317	1.188	0.1038	0.1021	0.1010	0.1002	0.0962	0.0954	0.0944	0.0928	1.312	1.183	1.152
	21	1.312500	1.136658	1.401	1.379	1.250	0.1038	0.1021	0.1010	0.1002	0.0962	0.0954	0.0943	0.0926	1.375	1.246	1.214
	22	1.375000	1.190785	1.463	1.442	1.313	0.1038	0.1021	0.1010	0.1002	0.0962	0.0954	0.0943	0.0926	1.437	1.308	1.277
8" NEMA	23	1.437500	1.244912	1.526	1.504	1.375	0.1039	0.1022	0.1010	0.1002	0.0962	0.0954	0.0942	0.0925	1.500	1.371	1.339
	24	1.500000	1.299038	1.588	1.567	1.438	0.1039	0.1022	0.1011	0.1002	0.0962	0.0953	0.0942	0.0925	1.562	1.433	1.402
	25	1.562500	1.353165	1.651	1.629	1.500	0.1039	0.1022	0.1011	0.1002	0.0962	0.0953	0.0942	0.0925	1.625	1.496	1.464

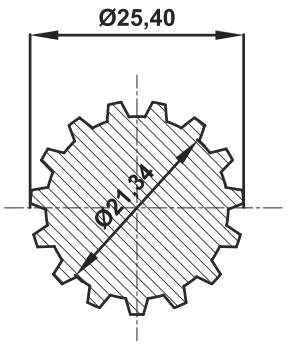
Birim / Unit [inch]

Standart Ölçüler / Standard Dimensions

6" NEMA



Kaplin / Coupling



Motor Mil Ucu / Motor Shaft End

Standards
ANSI B92.1/NEMA MG 1

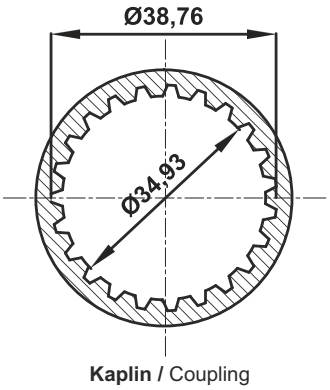
15 TEETH,
16/32 DP ,
30 ° PRESSURE ANGLE,
FLAT OR FILLET ROOT,
SIDE FIT,
CLASS 5.

6" NEMA	Symbol	Table-13	inch	mm
Kaplin Diş Dibi Çapı / Coupling Root Diameter	(D_{ri})	(4.1)	1,026 "	26,06
Kaplin Diş Üstü Çapı / Coupling Thread Diameter	(D_i)	(6.1)	0,877 "	22,28
Rotor Diş Üstü Çapı / Rotor Top Diameter	(D_o)	(14.1)	1,000 "	25,40
Rotor Diş Dibi Çapı / Rotor Root Diameter	(D_{re})	(18.1)	0,840 "	21,34
Modül / Spline Pitch	(P/P_s)	----	16/32 "	1,5875

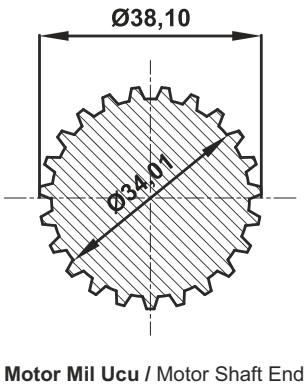
Spline verileri - 15 diş, 16/32 adım, 30 derece basınç açılı, düz veya diş dibi dolgulu, yandan geçme, tolerans Sınıfı 5, ANSI B92.1'e uygun standart dahili spline'lar.

Spline data - 15 teeth, 16/32 pitch, 30 degree pressure angle, flat or fillet root, side fit, tolerance Class 5, in accordance with ANSI B92.1, present standard internal splines.

8" NEMA



Kaplin / Coupling



Motor Mil Ucu / Motor Shaft End

Standards
ANSI B92.1/NEMA MG 1

23 TEETH,
16/32 DP ,
30 ° PRESSURE ANGLE,
FILLET ROOT,
SIDE FIT,
CLASS 5.

8" NEMA	Symbol	Table-13	inch	mm
Kaplin Diş Dibi Çapı / Coupling Root Diameter	(D_{ri})	(4.1)	1,526 "	38,76
Kaplin Diş Üstü Çapı / Coupling Thread Diameter	(D_i)	(6.1)	1,375 "	34,93
Rotor Diş Üstü Çapı / Rotor Top Diameter	(D_o)	(14.1)	1,500 "	38,10
Rotor Diş Dibi Çapı / Rotor Root Diameter	(D_{re})	(18.1)	1,339 "	34,01
Modül / Spline Pitch	(P/P_s)	----	16/32 "	1,5875

Spline verileri - 23 diş, 16/32 adım, 30 derece basınç açılı, diş dibi dolgulu, yandan geçme, tolerans Sınıf 5, ANSI B92.1'e uygun, standart dahili spline'lar.

Spline data - 23 teeth,16/32 pitch, 30 degree pressure angle, fillet root, side fit, tolerance Class 5, in accordance with ANSI B92.1.

BSPT [R / Rp] (55º - 1:16)
ISO 7-1 / EN 10226 - 1 (DIN 2999)
İngiliz Standart Konik Borusu (Konik Dış ve Silindirik İç Vidalar)
British Standard Tapered Pipe (Taper External Threads and Paralel Internal Thereads)

Key

P pitch
H 0,960491*P*
h 0,640327*P*
r 0,137239*P*

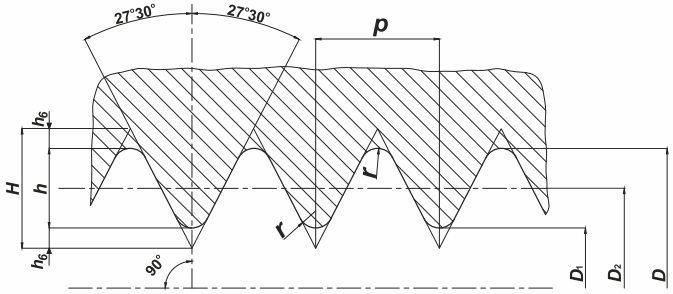


Figure 1 : Rp - Parallel thread (internal)

Key

1 gauge plane
2 taper
P pitch
H 0,960207*P*
h 0,640327*P*
r 0,137278*P*

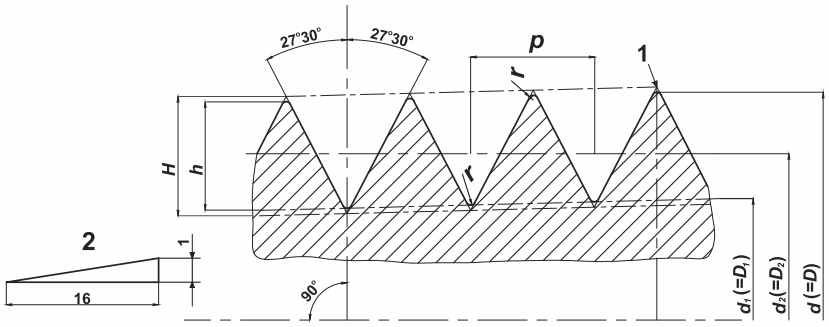


Figure 2 : R - Taper thread (external)

Key

1 accommodation length *(La)* useful thread length *(Li)*
2 washout thread
3 complete thread
4 parallel internal threads (Rp)
5 gauge diameter (*D*)
6 without free runout
7 with free runout
8 useful thread length
9 reference plane
10 accommodation length
11 gauge plane
12 face of internally threaded part at upper limit of tolerance, at hand tight condition
13 taper external threads (R)
14 gauge diameter (*D*)
15 major cone
16 wrenching length
17 assembly length
18 gauge length
19 useful thread
20 length equivalent to positive tolerance on internal thread plus 0,5 *P*
21 incomplete thread
22 useful thread length (not less than gauge length plus assembly length)

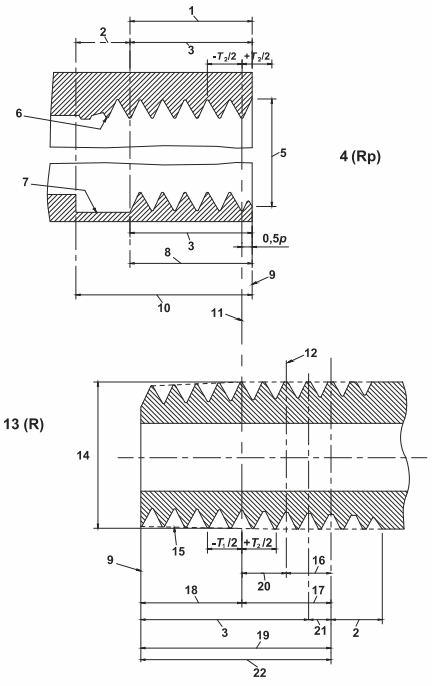


Figure 3 : Terms relating to pipe threads

BSPT [R / Rp] (55º - 1:16)
ISO 7-1 / EN 10226 - 1 (DIN 2999)
İngiliz Standart Konik Borusu (Konik Dış ve Silindirik İç Vidalar)
British Standard Tapered Pipe (Taper External Threads and Parallel Internal Threads)

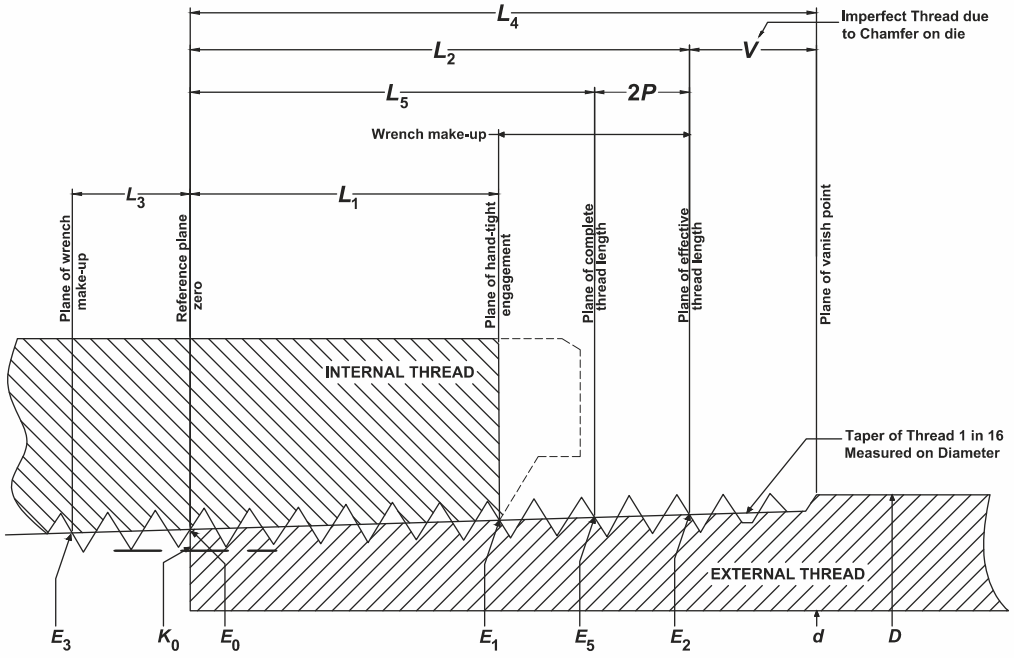
Table - Dimensions

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Thread size	Number of threads in 25,4 mm	Pitch	Height of thread	Diameters at gauge plane			Gauge length (external thread)					Assembly length		Length of useful external thread not less than			Tolarance on position of gauge plane on internal thread		
		P	*h*	Major (gauge diameter) *d = D*	Pitch $d_2 = D_2$	Minor $d_1 = D_1$	Nominal	Tolerance $T_1/2$		max.	min.		Turns of thread	For nominal gauge length	For maximum gauge length	For minimum gauge length	Tolerance $T_2/2$		Equivalent diametral tolerance[a] on parallel internal threads
		mm	mm	mm	mm	mm	mm	mm[b]	Turns of thread	mm	mm	mm[b]		mm	mm	mm	mm[b]	Turns of thread	mm[b]
1/16	28	0,907	0,581	7,723	7,142	6,561	4	+/- 0,9	1	4,9	3,1	2,5	2.3/4	6,5	7,4	5,6	+/- 1,1	1.1/4	+/- 0,071
1/8	28	0,907	0,581	9,728	9,147	8,566	4	+/- 0,9	1	4,9	3,1	2,5	2.3/4	6,5	7,4	5,6	+/- 1,1	1.1/4	+/- 0,071
1/4	19	1,337	0,856	13,157	12,301	11,445	6	+/- 1,3	1	7,3	4,7	3,7	2.3/4	9,7	11	8,4	+/- 1,7	1.1/4	+/- 0,104
3/8	19	1,337	0,856	16,662	15,806	14,950	6,4	+/- 1,3	1	7,7	5,1	3,7	2.3/4	10,1	11,4	8,8	+/- 1,7	1.1/4	+/- 0,104
1/2	14	1,814	1,162	20,955	19,793	18,631	8,2	+/- 1,8	1	10,0	6,4	5,0	2.3/4	13,2	15	11,4	+/- 2,3	1.1/4	+/- 0,142
3/4	14	1,814	1,162	26,441	25,279	24,117	9,5	+/- 1,8	1	11,3	7,7	5,0	2.3/4	14,5	16,3	12,7	+/- 2,3	1.1/4	+/- 0,142
1	11	2,309	1,479	33,249	31,770	30,291	10,4	+/- 2,3	1	12,7	8,1	6,4	2.3/4	16,8	19,1	14,5	+/- 2,9	1.1/4	+/- 0,180
$1^1/_4$	11	2,309	1,479	41,910	40,431	38,952	12,7	+/- 2,3	1	15,0	10,4	6,4	2.3/4	19,1	21,4	16,8	+/- 2,9	1.1/4	+/- 0,180
$1^1/_2$	11	2,309	1,479	47,803	46,324	44,845	12,7	+/- 2,3	1	15,0	10,4	6,4	2.3/4	19,1	21,4	16,8	+/- 2,9	1.1/4	+/- 0,180
2	11	2,309	1,479	59,614	58,135	56,656	15,9	+/- 2,3	1	18,2	13,6	7,5	3.1/4	23,4	25,7	21,1	+/- 2,9	1.1/4	+/- 0,180
$2^1/_2$	11	2,309	1,479	75,184	73,705	72,226	17,5	+/- 3,5	1.1/2	21,0	14,0	9,2	4	26,7	30,2	23,2	+/- 3,5	1.1/2	+/- 0,216
3	11	2,309	1,479	87,884	86,405	84,926	20,6	+/- 3,5	1.1/2	24,1	17,1	9,2	4	29,8	33,3	26,3	+/- 3,5	1.1/2	+/- 0,216
4	11	2,309	1,479	113,030	111,551	110,072	25,4	+/- 3,5	1.1/2	28,9	21,9	10,4	4.1/2	35,8	39,3	32,3	+/- 3,5	1.1/2	+/- 0,216
5	11	2,309	1,479	138,430	136,951	135,472	28,6	+/- 3,5	1.1/2	32,1	25,1	11,5	5	40,1	43,6	36,6	+/- 3,5	1.1/2	+/- 0,216
6	11	2,309	1,479	163,830	162,351	160,872	28,6	+/- 3,5	1.1/2	32,1	25,1	11,5	5	40,1	43,6	36,6	+/- 3,5	1.1/2	+/- 0,216

NOTES :
The main dimensions were converted into milimetres on the basis of 1 inch = 25,4 mm, beginning with the number of threads per inch, which determines the pitch P, the formula h (the height of thread) = 0,640 327 P and the major diameter at the gauge plane. Pitch diameter and minor diameter were then compiled by subtracting once or twice respectively the height of thread h from the major diameter. The nominal gauge length, the tolerances and the assembly length were directly computed. The remaining lengths given in table were obtained by subtracting or adding the tolerances or assembly length respectively to the nominal gauge length. Tolerances and assembly lengths are expressed in milimetres and number of turns of thread.

[a] For parallel internally threaded parts the diametral tolerances are derived from the tolerances in column 19 by multiplying with the corresponding pitch in column 3 and with 1/16, the amount of taper.
[b] Informative tolerances, in milimetres, are obtained from the mandatory values in turns of threads by multiplying with the corresponding pitch in column 3 and rounding to the nearest 0,1 mm.

NPT (60º - 1:16)
ANSI / ASME B1.20.1
Amerikan Ulusal Standart Konik Boru Dişleri
American National Standard Taper Pipe Threads



For all dimensions, see corresponding reference letter in table.
Angle between sides of thread is 60 degrees.
Taper of thread, on diameter, is ¾ inch per foot.
Angle of taper with center line is 1° 47′.
The basic maximum thread height, *h*, of the truncated thread is 0.8 x pitch of thread.
The crest and root are truncated a minimum of 0.033 x pitch for all pitches.
1 inch = 24,5 mm.

Formulas :
$E_0 = D - (0.05\,D + 1.1)\,P$
$E_1 = E_0 + 0.0625\,L_1$
$L_2 = (0.80\,D + 6.8)\,P$

NPT (60º - 1:16)
ANSI / ASME B1.20.1
Amerikan Ulusal Standart Konik Boru Dişinin Temel Boyutları
Basic Dimensions of American National Standard Taper Pipe Thread

Table - Basic Dimensions of American National Standard Taper Pipe Thread, NPT

Nominal Pipe Size	O.D. of Pipe, D	Threads / Inch, n	Pitch of Thread, P	Pitch Diameter at Beginning of External Threads, E_0	Hand-tight Engagement: Length, [1] L_1 in.	Hand-tight Engagement: Length, [1] L_1 Threads	Hand-tight Engagement: Pitch Diameter, [2] E_1	Effective Thread, External: Length, [3] L_2 in.	Effective Thread, External: Length, [3] L_2 Threads	Effective Thread, External: Pitch Diameter, E_2	Length, L_1 Plane to L_2 Plane, External Thread, $L_2 - L_1$ in.	Length, L_1 Plane to L_2 Plane, External Thread, $L_2 - L_1$ Threads	Wrench Make-Up Length, Internal Thread: Length, L_3 in.	Wrench Make-Up Length, Internal Thread: Length, L_3 Threads	Wrench Make-Up Length, Internal Thread: Pitch Diameter, E_3	Vanish Thread, V in.	Vanish Thread, V Threads	Overall Length, External Thread, [4] L_4	Nominal Complete External Threads [5]: Length, L_5 in.	Nominal Complete External Threads [5]: Pitch Diameter, E_5	Height of Thread, h	Change in Diameter per Turn of Thread, $0.0625/n$	Basic Minor [6] Diameter at Small End of Pipe, K_0
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1/16	0.3125	27	0.03703704	0.27118	0.1600	4.32	0.28118	0.2611	7.05	0.28750	0.1011	2.73	0.1111	3	0.26424	0.1285	3.47	0.3896	0.1870	0.28287	0.02963	0.00231	0.2415
1/8	0.4050	27	0.03703704	0.36351	0.1615	4.36	0.37360	0.2639	7.13	0.38000	0.1024	2.76	0.1111	3	0.35656	0.1285	3.47	0.3924	0.1898	0.37537	0.02963	0.00231	0.3338
1/4	0.5400	18	0.05555556	0.47739	0.2278	4.10	0.49163	0.4018	7.23	0.50250	0.1740	3.13	0.1667	3	0.46697	0.1928	3.47	0.5946	0.2907	0.49556	0.04444	0.00347	0.4329
3/8	0.6750	18	0.05555556	0.61201	0.2400	4.32	0.62701	0.4078	7.34	0.63750	0.1678	3.02	0.1667	3	0.60160	0.1928	3.47	0.6006	0.2967	0.63056	0.04444	0.00347	0.5675
1/2	0.8400	14	0.07142857	0.75843	0.3200	4.48	0.77843	0.5337	7.47	0.79178	0.2137	2.99	0.2143	3	0.74504	0.2479	3.47	0.7815	0.3909	0.78286	0.05714	0.00446	0.7014
3/4	1.0500	14	0.07142857	0.96768	0.3390	4.75	0.98887	0.5457	7.64	1.00178	0.2067	2.89	0.2143	3	0.95429	0.2479	3.47	0.7935	0.4029	0.99286	0.05714	0.00446	0.9106
1	1.3150	11.5	0.08695652	1.21363	0.4000	4.60	1.23863	0.6828	7.85	1.25631	0.2828	3.25	0.2609	3	1.19733	0.3017	3.47	0.9845	0.5089	1.24544	0.06957	0.00543	1.1441
1 1/4	1.6600	11.5	0.08695652	1.55713	0.4200	4.83	1.58338	0.7068	8.13	1.60131	0.2868	3.30	0.2609	3	1.54083	0.3017	3.47	1.0085	0.5329	1.59044	0.06957	0.00543	1.4876
1 1/2	1.9000	11.5	0.08695652	1.79609	0.4200	4.83	1.82234	0.7235	8.32	1.84131	0.3035	3.49	0.2609	3	1.77978	0.3017	3.47	1.0252	0.5496	1.83044	0.06957	0.00543	1.7266
2	2.3750	11.5	0.08695652	2.26902	0.4360	5.01	2.29627	0.7565	8.70	2.31630	0.3205	3.69	0.2609	3	2.25272	0.3017	3.47	1.0582	0.5826	2.30543	0.06957	0.00543	2.1995
2 1/2	2.8750	8	0.12500000	2.71953	0.6820	5.46	2.76216	1.1375	9.10	2.79063	0.4555	3.64	0.2500	2	2.70391	0.4338	3.47	1.5712	0.8875	2.77500	0.10000	0.00781	2.6195
3	3.5000	8	0.12500000	3.34063	0.7660	6.13	3.38850	1.2000	9.60	3.41563	0.4340	3.47	0.2500	2	3.32500	0.4338	3.47	1.6337	0.9500	3.40000	0.10000	0.00781	3.2406
3 1/2	4.0000	8	0.12500000	3.83750	0.8210	6.57	3.88881	1.2500	10.00	3.91563	0.4290	3.43	0.2500	2	3.82188	0.4338	3.47	1.6837	1.0000	3.90000	0.10000	0.00781	3.7374
4	4.5000	8	0.12500000	4.33438	0.8440	6.75	4.38713	1.3000	10.40	4.41563	0.4560	3.65	0.2500	2	4.31875	0.4338	3.47	1.7337	1.0500	4.40000	0.10000	0.00781	4.2343
5	5.5630	8	0.12500000	5.39073	0.9370	7.50	5.44929	1.4063	11.25	5.47863	0.4693	3.75	0.2500	2	5.37511	0.4338	3.47	1.8400	1.1563	5.46300	0.10000	0.00781	5.2907
6	6,6250	8	0.12500000	6.44609	0.9580	7.66	6.50597	1.5125	12.10	6.54063	0.5545	4.44	0.2500	2	6.43047	0.4338	3.47	1.9462	1.2625	6.52500	0.10000	0.00781	6.3460
8	8.6250	8	0.12500000	8.43359	1.0630	8.50	8.50003	1.7125	13.70	8.54063	0.6495	5.20	0.2500	2	8.41797	0.4338	3.47	2.1462	1.4625	8.52500	0.10000	0.00781	8.3335
10	10.7500	8	0.12500000	10.54531	1.2100	9.68	10.62094	1.9250	15.40	10.66563	0.7150	5.72	0.2500	2	10.52969	0.4338	3.47	2.3587	1.6750	10.6500	0.10000	0.00781	10.4453
12	12.7500	8	0.12500000	12.53281	1.3600	10.88	12.61781	2.1250	17.00	12.66563	0.7650	6.12	0.2500	2	12.51719	0.4338	3.47	2.5587	1.8750	12.6500	0.10000	0.00781	12.4328
14	14.0000	8	0.12500000	13.77500	1.5620	12.50	13.87263	2.2500	18.00	13.91563	0.6880	5.50	0.2500	2	13.75938	0.4338	3.47	2.6837	2.0000	13.9000	0.10000	0.00781	13.6749
16	16.0000	8	0.12500000	15.76250	1.8120	14.50	15.87575	2.4500	19.60	15.91563	0.6380	5.10	0.2500	2	15.74688	0.4338	3.47	2.8837	2.2000	15.9000	0.10000	0.00781	15.6624
18	18.0000	8	0.12500000	17.75000	2.0000	16.00	17.87500	2.6500	21.20	17.91563	0.6500	5.20	0.2500	2	17.73438	0.4338	3.47	3.0837	2.4000	17.9000	0.10000	0.00781	17.6499
20	20.0000	8	0.12500000	19.73750	2.1250	17.00	19.87031	2.8500	22.80	19.91563	0.7250	5.80	0.2500	2	19.72188	0.4338	3.47	3.2837	2.6000	19.9000	0.10000	0.00781	19.6374
24	24.0000	8	0.12500000	23.71250	2.3750	19.00	23.86094	3.2500	26.00	23.91563	0.8750	7.00	0.2500	2	23.69688	0.4338	3.47	3.6837	3.0000	23.9000	0.10000	0.00781	23.6124

GENERAL NOTE :
The basic dimensions of the American National Standard Taper Pipe Thread are given in inches to four or five decimal places. While this implies a greater degree of precision than is ordinarily attained, these dimensions are the basis of gage dimensions and are so expressed for the purpose of eliminating errors in computations.
1 inch = 25,4 mm

NOTES:
(1) Also length of L_1 ring gage and length from gaging notch to small end of L_1 plug gage.
(2) Also pitch diameter at gaging notch of L_1 plug gage (hand-tight plane).
(3) Also threaded length of L_1 plug gage.
(4) Reference dimension.
(5) The length L_5 from the end of the pipe determines the plane beyond which the thread form is incomplete at the crest. The next two threads are complete at the root. At this plane, the cone formed by the crests of the thread intersects the cylinder forming the external surface of the pipe ($L_5 = L_2 - 2P$).
(6) Given as information for use in selecting tap drills.

Metal Borularda Basınç Kayıpları • Head Losses in Metal Pipes [m/100m]

Su Miktarı Quantity of Water			İnç Cinsinden Nominal Boru Çapı ve mm Cinsinden Boru İç Çapı Nominal Pipe Diameter in inches and Internal Diameter in mm										
[m³/h]	[l/min]	[l/s]	½" 15,75	¾" 21,25	1" 27,00	1¼" 35,75	1½" 41,25	2" 52,50	2½" 68,00	3" 80,25	3½" 92,50	4" 105,0	5" 130,0	6" 155,5
0,6	10	0,16	0,855 **9,910**	0,470 **2,407**	0,292 **0,784**									
0,9	15	0,25	1,282 **20,11**	0,705 **4,862**	0,438 **1,570**	0,249 **0,416**								
1,2	20	0,33	1,710 **33,53**	0,940 **8,035**	0,584 **2,588**	0,331 **0,677**	0,249 **0,346**							
1,5	25	0,42	2,138 **49,93**	1,174 **11,91**	0,730 **3,834**	0,415 **1,004**	0,312 **0,510**							
1,8	30	0,50	2,565 **69,34**	1,409 **16,50**	0,876 **5,277**	0,498 **1,379**	0,374 **0,700**	0,231 **0,223**						
2,1	35	0,58	2,993 **91,54**	1,644 **21,75**	1,022 **6,949**	0,581 **1,811**	0,436 **0,914**	0,269 **0,291**						
2,4	40	0,67		1,879 **27,66**	1,168 **8,820**	0,664 **2,290**	0,499 **1,160**	0,308 **0,368**						
3,0	50	0,83		2,349 **41,40**	1,460 **13,14**	0,830 **3,403**	0,623 **1,719**	0,385 **0,544**	0,229 **0,159**					
3,6	60	1,00		2,819 **57,74**	1,751 **18,28**	0,996 **4,718**	0,748 **2,375**	0,462 **0,751**	0,275 **0,218**					
4,2	70	1,12		3,288 **76,49**	2,043 **24,18**	1,162 **6,231**	0,873 **3,132**	0,539 **0,988**	0,321 **0,287**	0,231 **0,131**				
4,8	80	1,33			2,335 **30,87**	1,328 **7,940**	0,997 **3,988**	0,616 **1,254**	0,367 **0,363**	0,263 **0,164**				
5,4	90	1,50			2,627 **38,30**	1,494 **9,828**	1,122 **4,927**	0,693 **1,551**	0,413 **0,449**	0,269 **0,203**				
6,0	100	1,67			2,919 **46,49**	1,660 **11,90**	1,247 **5,972**	0,770 **1,875**	0,459 **0,542**	0,329 **0,244**	0,248 **0,124**			
7,5	125	2,08			3,649 **70,41**	2,075 **17,93**	1,558 **8,967**	0,962 **2,802**	0,574 **0,809**	0,412 **0,365**	0,310 **0,185**	0,241 **0,101**		
9,0	150	2,50				2,490 **25,11**	1,870 **12,53**	1,154 **3,903**	0,668 **1,124**	0,494 **0,506**	0,372 **0,256**	0,289 **0,140**		
10,5	175	2,92				2,904 **33,32**	2,182 **16,66**	1,347 **5,179**	0,803 **1,488**	0,576 **0,670**	0,434 **0,338**	0,337 **0,184**		
12	200	3,33				3,319 **42,75**	2,493 **21,36**	1,539 **6,624**	0,918 **1,901**	0,659 **0,855**	0,496 **0,431**	0,385 **0,234**	0,251 **0,084**	
15	250	4,17				4,149 **64,86**	3,117 **32,32**	1,924 **10,03**	1,147 **2,860**	0,823 **1,282**	0,620 **0,646**	0,481 **0,350**	0,314 **0,126**	
18	300	5,00					3,740 **45,52**	2,309 **14,04**	1,377 **4,009**	0,988 **1,792**	0,744 **0,903**	0,577 **0,488**	0,377 **0,175**	0,263 **0,074**
24	400	6,67					4,987 **78,17**	3,078 **24,04**	1,836 **6,828**	1,317 **3,053**	0,992 **1,530**	0,770 **0,829**	0,502 **0,294**	0,351 **0,124**
30	500	8,33						3,848 **36,71**	2,295 **10,40**	1,647 **4,622**	1,240 **2,315**	0,962 **1,254**	0,628 **0,445**	0,439 **0,187**
36	600	10,0						4,618 **51,84**	2,753 **14,62**	1,976 **6,505**	1,488 **3,261**	1,155 **1,757**	0,753 **0,623**	0,526 **0,260**
42	700	11,7							3,212 **19,52**	2,306 **8,693**	1,736 **4,356**	1,347 **2,345**	0,879 **0,831**	0,614 **0,347**
48	800	13,3							3,671 **25,20**	2,635 **11,18**	1,984 **5,582**	1,540 **3,009**	1,005 **1,066**	0,702 **0,445**
54	900	15,0							4,130 **31,51**	2,964 **13,97**	2,232 **6,983**	1,732 **3,762**	1,130 **1,328**	0,790 **0,555**
60	1000	16,7							4,589 **38,43**	3,294 **17,06**	2,480 **8,521**	1,925 **4,595**	1,256 **1,616**	0,877 **0,674**
75	1250	20,8								4,117 **26,10**	3,100 **13,00**	2,406 **7,010**	1,570 **2,458**	1,097 **1,027**
90	1500	25,0								4,941 **36,97**	3,720 **18,42**	2,887 **9,892**	1,883 **3,468**	1,316 **1,444**
105	1750	29,2									4,340 **24,76**	3,368 **13,30**	2,197 **4,665**	1,535 **1,934**
120	2000	33,3									4,960 **31,94**	3,850 **17,16**	2,511 **5,995**	1,754 **2,496**
150	2500	41,7										4,812 **26,26**	3,139 **9,216**	2,193 **3,807**
180	3000	50,0											3,767 **13,05**	2,632 **5,417**
240	4000	66,7											5,023 **22,72**	3,509 **8,926**
300	5000	83,3												4,386 **14,42**
90 ° dirsek, vana			1,0	1,0	1,1	1,2	1,3	1,4	1,5	1,6	1,6	1,7	2,0	2,5
T bağlantı, çek-valf			4,0	4,0	4,0	5,0	5,0	5,0	6,0	6,0	6,0	7,0	8,0	9,0

Ufak rakamlar suyun hızını m/s cinsinden göstermektedir. Büyük rakamlar düz borular için her 100 metredeki su sütunu kaybını metre cinsinden göstermektedir.
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The head loss in bends,slide valves, T-pieces and non-return valves is equivalent to the meters of straight pipes stated in the last two lines of the table.

PVC Borularda Basınç Kayıpları • Head Losses in Plastic Pipes [m/100m]

Su Miktarı Quantity of Water			DN.. Cinsinden Nominal Boru Çapı ve mm Cinsinden Boru İç Çapı (PN 10) Nominal Pipe Diameter in DN.. and Internal Diameter in mm (PN 10)											
[m^3/h]	[l/min]	[l/s]	25 20,4	32 26,2	40 32,6	50 40,8	63 51,4	75 61,4	90 73,6	110 90,0	125 102,2	140 114,6	160 130,8	180 147,2
0,6	10	0,16	0,49 **1,8**	0,30 **0,66**	0,19 **0,27**	0,12 **0,085**								
0,9	15	0,25	0,76 **4,0**	0,46 **1,14**	0,3 **0,6**	0,19 **0,18**	0,12 **0,63**							
1,2	20	0,33	1,0 **6,4**	0,61 **2,2**	0,39 **0,9**	0,25 **0,28**	0,16 **0,11**							
1,5	25	0,42	1,3 **10,0**	0,78 **3,5**	0,5 **1,4**	0,32 **0,43**	0,2 **0,17**	0,14 **0,074**						
1,8	30	0,50	1,53 **13,0**	0,93 **4,6**	0,6 **1,9**	0,38 **0,57**	0,24 **0,22**	0,17 **0,092**						
2,1	35	0,58	1,77 **16,0**	1,08 **6,0**	0,69 **2,0**	0,44 **0,70**	0,28 **0,27**	0,2 **0,12**						
2,4	40	0,67	2,05 **22,0**	1,24 **7,5**	0,80 **3,3**	0,51 **0,93**	0,32 **0,35**	0,23 **0,16**	0,16 **0,063**					
3,0	50	0,83	2,54 **37,0**	1,54 **11,0**	0,99 **4,8**	0,63 **1,40**	0,40 **0,50**	0,28 **0,22**	0,2 **0,09**					
3,6	60	1,00	3,06 **43,0**	1,85 **15,0**	1,2 **6,5**	0,76 **1,90**	0,48 **0,70**	0,34 **0,32**	0,24 **0,13**	0,16 **0,050**				
4,2	70	1,12	3,43 **50,0**	2,08 **18,0**	1,34 **8,0**	0,86 **2,50**	0,54 **0,83**	0,38 **0,38**	0,26 **0,17**	0,18 **0,068**				
4,8	80	1,33		2,47 **25,0**	1,59 **10,5**	1,02 **3,00**	0,64 **1,20**	0,45 **0,50**	0,31 **0,22**	0,2 **0,084**				
5,4	90	1,50		2,78 **30,0**	1,8 **12,0**	1,15 **3,50**	0,72 **1,30**	0,51 **0,57**	0,35 **0,26**	0,24 **0,092**	0,18 **0,05**			
6,0	100	1,67		3,1 **39,0**	2,0 **16,0**	1,28 **4,6**	0,80 **1,80**	0,56 **0,73**	0,39 **0,30**	0,26 **0,12**	0,2 **0,07**			
7,5	125	2,08		3,86 **50,0**	2,49 **24,0**	1,59 **6,6**	1,00 **2,50**	0,70 **1,10**	0,49 **0,50**	0,33 **0,18**	0,25 **0,10**	0,20 **0,055**		
9,0	150	2,50			3,00 **33,0**	1,91 **8,6**	1,20 **3,5**	0,84 **1,40**	0,59 **0,63**	0,39 **0,24**	0,30 **0,13**	0,24 **0,075**		
10,5	175	2,92			3,5 **38,0**	2,23 **11,0**	1,41 **4,3**	0,99 **1,80**	0,69 **0,78**	0,46 **0,30**	0,36 **0,18**	0,28 **0,09**		
12	200	3,33			3,99 **50,0**	2,55 **14,0**	1,60 **5,5**	1,12 **2,40**	0,78 **1,0**	0,52 **0,40**	0,41 **0,22**	0,32 **0,12**	0,25 **0,065**	
15	250	4,17				3,19 **21,0**	2,01 **8,0**	1,41 **3,70**	0,98 **1,50**	0,66 **0,57**	0,51 **0,34**	0,40 **0,18**	0,31 **0,105**	0,25 **0,06**
18	300	5,00				3,82 **28,0**	2,41 **10,5**	1,69 **4,60**	1,18 **1,95**	0,78 **0,77**	0,61 **0,45**	0,48 **0,25**	0,37 **0,13**	0,29 **0,085**
24	400	6,67					3,21 **19,0**	2,25 **8,0**	1,57 **3,60**	1,05 **1,40**	0,81 **0,78**	0,65 **0,44**	0,50 **0,23**	0,39 **0,15**
30	500	8,33					4,01 **28,0**	2,81 **11,5**	1,96 **5,0**	1,1 **2,0**	1,02 **1,20**	0,81 **0,63**	0,62 **0,33**	0,49 **0,21**
36	600	10,0					4,82 **37,0**	3,38 **15,0**	2,35 **6,6**	1,57 **2,60**	1,22 **1,50**	0,97 **0,82**	0,74 **0,45**	0,59 **0,28**
42	700	11,7					5,64 **47,0**	3,95 **24,0**	2,75 **8,0**	1,84 **3,50**	1,43 **1,90**	1,13 **1,10**	0,87 **0,60**	0,69 **0,40**
48	800	13,3						4,49 **26,0**	3,13 **11,0**	2,09 **4,5**	1,62 **2,60**	1,29 **1,40**	0,99 **0,81**	0,78 **0,48**
54	900	15,0						5,07 **33,0**	3,53 **13,5**	2,36 **5,5**	1,83 **3,20**	1,45 **1,70**	1,12 **0,95**	0,86 **0,58**
60	1000	16,7						5,64 **40,0**	3,93 **16,0**	2,63 **6,7**	2,04 **3,90**	1,62 **2,2**	1,24 **1,2**	0,96 **0,75**
75	1250	20,8							4,89 **25,0**	3,27 **9,0**	2,54 **5,0**	2,02 **3,0**	1,55 **1,6**	1,22 **0,95**
90	1500	25,0							5,88 **33,0**	3,93 **13,0**	3,05 **8,0**	2,42 **4,1**	1,86 **2,3**	1,47 **1,40**
105	1750	29,2							6,86 **44,0**	4,59 **17,5**	3,56 **9,7**	2,83 **5,7**	2,17 **3,2**	1,72 **1,9**
120	2000	33,3								5,23 **23,0**	4,06 **13,0**	3,23 **7,0**	2,48 **4,0**	1,96 **2,4**
150	2500	41,7								6,55 **34,0**	5,08 **18,0**	4,04 **10,5**	3,10 **6,0**	2,45 **3,5**
180	3000	50,0								7,86 **45,0**	6,10 **27,0**	4,85 **14,0**	3,72 **7,6**	2,94 **5,2**
240	4000	66,7									8,13 **43,0**	6,47 **24,0**	4,96 **13,0**	3,92 **7,5**
300	5000	83,3										8,08 **33,0**	6,2 **18,0**	4,89 **11,0**
90 ° dirsek, vana			1,0	1,0	1,1	1,2	1,3	1,4	1,5	1,6	1,6	1,7	2,0	2,5
T bağlantı, çek-valf			4,0	4,0	4,0	5,0	5,0	5,0	6,0	6,0	6,0	7,0	8,0	9,0

Ufak rakamlar suyun hızını m/s cinsinden göstermektedir. Büyük rakamlar düz borular için her 100 metredeki su sütunu kaybını metre cinsinden göstermektedir.
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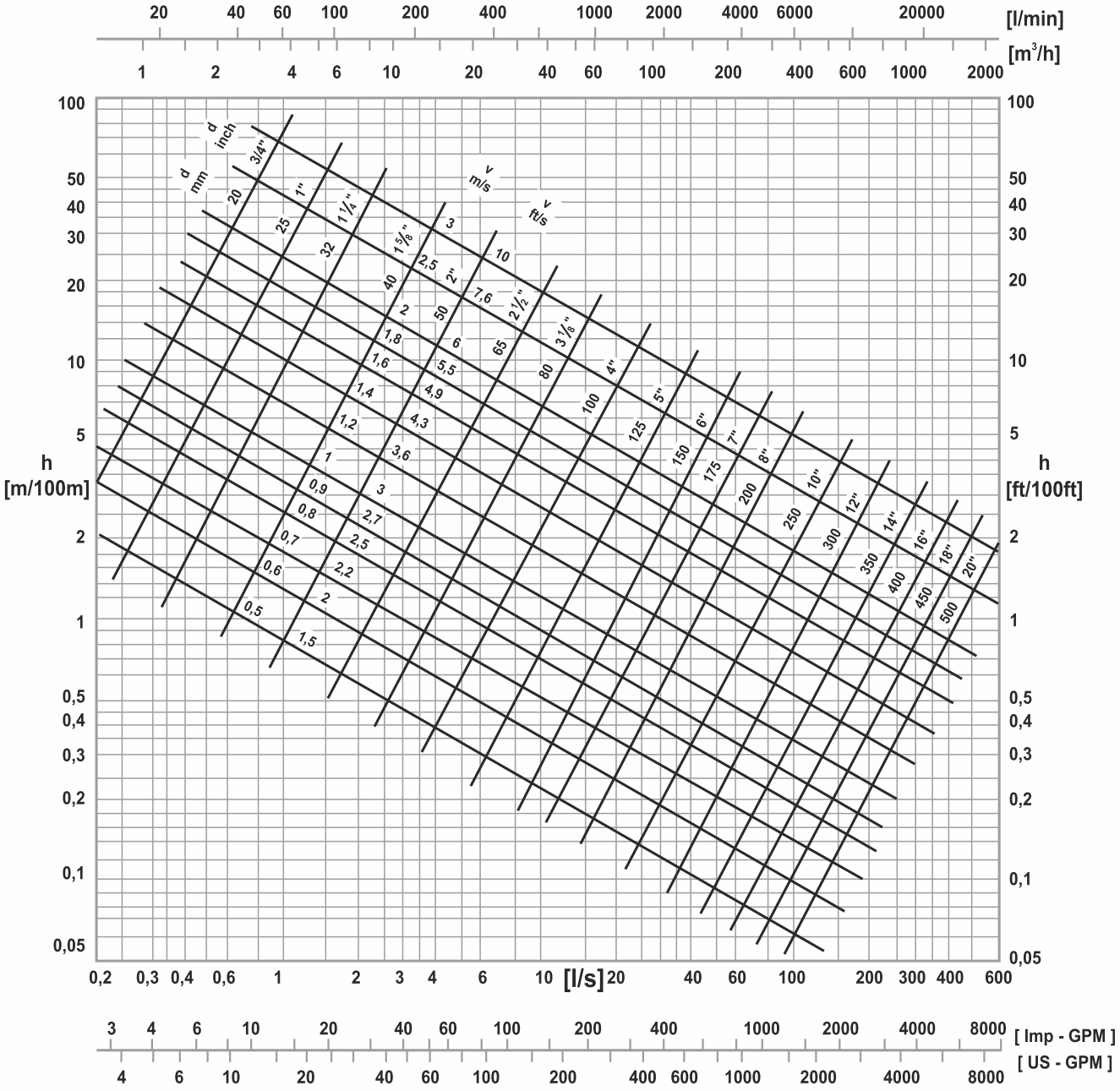
Boru Sürtünme Kaybı
Friction Losses in Pipes
[m / 100m]



Bu tablo 15 °C sıcaklıkta temiz su için yapılmıştır.
Tablo değerleri dökme demir borular için geçerlidir.

Boru tiplerine göre aşağıdaki katsayılar ile çarpılmalıdır.
[h x 0,8] Yeni haddelenmiş çelik borular için
[h x 1,25] Hafif paslanmış çelik borular için
[h x 0,65] PVC borular için
[h x 1,25] Asbestli çimento boruları için
[h x 0,7] Alüminyum borular için

Q = Su miktarı
v = Suyun hızı
d = Boru çapı
h = Sürtünme kaybı

This table was made for clean water at 15 ° C.
Table values apply to cast iron pipes.

Multiply the following coefficients according to the pipe types.
[h x 0,8] For new rolled steel pipes
[h x 1,25] For lightly rusted steel pipes
[h x 0,65] For PVC pipes
[h x 1,25] For asbestos cement pipes
[h x 0,7] For aluminium pipes

Q = Quantity of water
v = Velocity of pipe
d = Diameter of pipe
h = Friction loss

Ölçü Birimlerinin Çevrim Tabloları
Conversion Tables of Measurement Units

Debi Flow	[m³/h]	[l/s]	[l/min]	[US-GPM]	[Imp-GPM]
1 m³/h	1	0,2778	16,667	4,4029	3,666
1 l/s	3,6	1	60	15,850	13,198
1 l/min	0,06	0,0167	1	0,264	0,22
1 US-GPM	0,227	0,0631	3,785	1	0,8327
1 Imp-GPM	0,273	0,0758	4,546	1,201	1

Basınç Pressure	[bar]	[mSS]	[Pa]	[kPa]	[psi]	[atm]
1 bar	1	10,2	$1x10^{5}$	100	14,5038	0,9869
1 mSS	0,098	1	9804,14	9,804	1,422	0,0968
1 Pa	10^{-5}	$0,102x10^{-3}$	1	10^{-3}	$0,145x10^{-3}$	$9,87x10^{-6}$
1 kPa	10^{-2}	0,102	1000	1	0,145	$9,87x10^{-3}$
1 psi	0,06895	0,7032	6895	6,895	1	0,068
1 atm	1,013	10,335	$101,33x10^{3}$	101,325	14,696	1

Güç Power	[kW]	[HP]	[CV]	[kCal/h]	[Btu/h]	[J/s]
1 kW	1	1,341	1,3596	860,42	3412,14	1000
1 HP (Imperial)	0,7457	1	1,01387	641,62	2544,43	745,7
1 CV (Metric)	0,7355	0,98632	1	632,84	2509,63	735,5
1 kCal/h	$1,162x10^{-3}$	$1,56x10^{-3}$	$1,58x10^{-3}$	1	3,966	1,162
1 Btu/h	$293x10^{-6}$	$393x10^{-6}$	$398x10^{-6}$	0,252	1	0,293
1 J/s	0,001	$1,34x10^{-3}$	$1,36x10^{-3}$	0,86	3,412	1

Uzunluk Length	[m]	[ft]	[inch]	[yard]	[mile]	[nmi]
1 m	1	3,281	39,37	1,0936	$621,37x10^{-6}$	$539,96x10^{-6}$
1 ft	0,3048	1	12	0,333	$189,39x10^{-6}$	$164,58x10^{-6}$
1 inch	0,0254	0,0833	1	0,02778	$15,78x10^{-6}$	$13,71x10^{-6}$
1 yard	0,9144	3	36	1	$568,18x10^{-6}$	$493,74x10^{-6}$
1 mile	1609,34	5280	63360	1760	1	0,868976
1 nmi	1852	6076,12	72913,39	2025,37	1,15078	1

Alan Area	[m^2]	[ft^2]	[$inch^2$]	[$yard^2$]	[$mile^2$]	[ha]
1 m^2	1	10,764	1550	1,196	$386,1x10^{-9}$	$100x10^{-6}$
1 ft^2	0,0929	1	144	0,111	$35,87x10^{-9}$	$9,29x10^{-6}$
1 $inch^2$	$645x10^{-6}$	0,00694	1	$771,6x10^{-6}$	$0,249x10^{-9}$	$0,064x10^{-6}$
1 $yard^2$	0,836	9	1296	1	$322,83x10^{-9}$	$83,61x10^{-6}$
1 $mile^2$	$2,59x10^{6}$	$27,88x10^{6}$	$4,015x10^{9}$	$3,098x10^{6}$	1	259
1 ha	10000	$107,64x10^{3}$	$15,5x10^{6}$	$11,96x10^{3}$	$3,861x10^{-3}$	1

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