FLOWSERVE

BAKIM - ONARIM

REMS

MÜHENDİSLİK

Petkim Petrokimya Tesisi /Aliağa, Turkey
Aromatik Fabrikası, Rerun Bottoms Pompa Değişimi, Anahtar Teslim Proje

HAKKIMIZDA

• Rapid Engineering and Maintenance Solutions - REMS şirketinin amacı, Türkiye'de ve bölgede Petrol ve Gaz, Kimya ve Petrokimya, Elektrik Üretimi ve diğer Genel Sanayi sektörlerine mühendislik ve bakım çözümleri ile inşaat hizmetleri sunmaktır.

• REMS şirketi, farklı projelerde yıllardır edindiği deneyimlerine ve diğer yandan dünyanın en kritik uygulamaları için döner ekipmanların üretiminde ve bakımında dünya lideri olan REMS partner şirketlerinden (Flowserve, Ethos Energy ve Emisshıeld) edindiği deneyimlere güvenmektedir.

Görev Tanımı

- Müşteri tarafından tanımlanan yeni Görev Noktasını karşılamak için mevcut pompa hidroliğini değiştirin.
- Pompanın ayakizini koruyun (Emme ve basma boru hatları değiştirilmeyecek. Ayrıca taban plakasının değiştirilmesine de izin verilmeyecek).
- Mevcut kaplini kontrol edin ve iyi durumda değilse yenisiyle değiştirin.
- Mevcut tekli salmastrayı çiftli salmastra ile değiştirin.
- Mevcut olan API 22 su soğutmalı salmastra destek sistemini, uygun olan hava soğutmalı API 53B/23 salmastra destek sistemiyle değiştirin.
- Mevcut olan elektrik motorunu ve taban plakasını kullanın.

İşin Kapsamı

*Mühendislik-(Hidrolik,Hesaplamalar,Dizayn-Flowserve)
*API 610 12th yayınına göre geliştirilmiş hidroliğe sahip ATEX sertifikalı iki yeni pompanın teslimatı(Flowserve)
*API 53B/23 salmastra destek sistemlerinin teslimatı (Flowserve)
*Çiftli, metal körüklü mekanik salmastraların teslimatı (Flowserve)
*Yeni kaplinlerin teslimatı. (John Crane)
*İki yıllık operasyonlar için gerekli olacak pompanın yedek parçaları ,yedek mekanik salmastra ve kaplin setinin teslimatı
*Eski pompa ve salmastra sisteminin demontajı (REMS)
*Yeni pompaların montajı (REMS)
*Yeni salmastra sisteminin montajı (REMS/Flowserve)
*Salmastralar ve salmastra destek sistemlerinin arasındaki bağlantı borularının montajı (REMS/Flowserve)
*Kaplin montajı ve kaplin ayarı yapılması (REMS)
*Pompa ve salmastra destek sisteminin devreye alınması (REMS/Flowserve)
*Pompanın çalıştırılması (REMS/Flowserve)
*Pompa ve salmastra sisteminin izlenmesi/takip edilmesi (REMS)
*Bütün belgelendirme işleri (REMS/Flowserve)

Uygulama-Operasyon Koşulları / Pompa & Salmastra Destek Sistemi

Servis: RERUN BOTTOMS POMPALARI

- Ürün: Hydrocarbon (Heavy Naphtha)
- Sıcaklık: Nor.200ºC./Max 260 ºC
- Emiş Basıncı: Normal: 1.29 Kg/cm2g
- Basma Basıncı: 10,66 Kg/cm2g
- SBOX Basıncı: 2.4 Kg/cm2G
- Buhar Basıncı (Norm): 2.1 Kg/cm2a
- Özgül Ağırlık (Norm): 0.642
- Viskozite (Norm): 0.21 cP
- RPM: 2950

Pompa: Flowserve

- 2 HPX 13B /HORZ/1 Kademe
- OH2. 1stg, API 610 12th yayın

Salmastra & Destek Sistemi: Flowserve

- Salmastra: BXHHSBW/BXHHSW
- Boyut : 3.125”/3.125”
- Biçim: D:P -FB
- API: 23/53B (Hava Soğutucu X2)
- Bariyer Sıvısı: Duraclear 32F

Mevcut Pompa A/B

Mevcut Pompanın Verileri A/B

JGC CORPORATION
DATA SHEET

215-GXM 205/1 (2)

CENTRIFUGAL PUMPS

205AB

1	Client PETKIM PETROKIMYA A.S.	Project AROMATICS PLANT		Item No.	215-G 205AB
2	Unit NAPHTHA HYDROTREATING PLAT FORMUNE	Service RERUN BOTTOMS			
3	No. of units: Main 1	driven by MOTOR	Manufacturer: NIIGATA NORTHINGTON	Mfr's Model	2HNN-132
4	Spare 1	driven by MOTOR			

	OPERATING CONDITIONS		CONSTRUCTION	
6	Liquid:	HYDROCARBON	Pump type	HORIZONTAL
7	PT (pumping temp.) °C	200	Case split	VERTICAL
8	Sp. Gr. at PT	0.621	No. of stages	1
9	Vap. press. at PT kg/cm²A	2.09	Impeller type	S-SUCTION CLOSE
10	Viscosity at PT cst cp	—	Volute type	SINGLE
11	Corr./Eros. caused by	—	Casing support type	CENTERLINE
12	Capacity: normal m³/hr	52.2	Shaft support type	OVERHUNG
13	rated m³/hr	57.5		
14	Differential head m	123.3		
15	Discharge press. kg/cm²G	8.79		
16	Suction press. kg/cm²G	1.20		
17	Diff. press. kg/cm²	7.59		
18	Water HP kW	12		
19	Max. Suction press. kg/cm²G	3.87		
20	NPSH avail. m	2.3		
21	PERFORMANCE			
22	NPSH req'd m	2.0		
23	Efficiency %	58		
24	BHP at rated cap. kW	20.7		
25	Driver power kW	30		
26	Min. Continuous cap. m³/hr	11		
27	Max. Head rated imp. m	134		
28	Max. BHP rated imp. kW	27		
29	Max. working press. kg/cm²G	14		
30	Hydrotest press. kg/cm²G	21		
31	Design temp. °C	220		
32	Rotation facing coupling	CCW		
33	Rotating speed rpm	2950		
34	Ns m³/m-m	86		

Nozzles:	Size	Rating	Facing	Location
Suction	4"	ANSI 300	RF	END
Discharge	2"	ANSI 300	RF	TOP
Vent	—			
Drain	1/2"	ANSI 300	RF	BASE END
C.W. in	1"	ANSI 150	RF	BASE END
out	1"	ANSI 150	RF	BASE END
Flushing	1/2"	ANSI 300	RF	—

Imp. diam.	min 241 / rated 302 / max 318 mm
Casing thickness	16 mm
Corrosion allowance	3 mm
Bearing No. radial/thrust	5212 / 7311 BDB
Lubrication type	OIL FLINGER
Coupling type/guard	GEAR / YES
Packing: Mfr. No. size	—
Mechanical seal: API code	B.S.T.Gr.L
Mfr. size model No.	L4B055ED03
API plan: flush/aux seal	22 / 61
Baseplate	COMMON DRAIN RIM

SHOP TESTS	Required	Witnessed
Performance	YES	YES
NPSH	YES	YES
Hydrotest	YES	—

MATERIALS API Mat'l.class:			
Casing	SCPH2	Throat bush	SUS420J2
Inner parts	—	Shaft	SCM3
Impeller	FC25	Case gasket	ASBESTOS
Shaft sleeve	SUS420J2	Sleeve gasket	ASBESTOS
Case wear ring	SUS420J2	Bolts	SCM3
Imp. wear ring	SUS420J2		

Motor:	supplied by	JGC
	mounted by	P-VENDER
	HP: 30 kW 2950 rpm	
	Phase: 3 Volts: 380 V	
	Cycles: 50 Type:	
	Full load curr.: amp.	
Turbine:	supplied by	
	mounted by	
	HP: kW rpm	
	Steam consump. Ton/hr lb/hr	
	Type:	

Cooling water:	API c.w. pipe plan: K	
Type:	Bearing housing	11.5 l/m gpm
	Stuffing box	l/m gpm
	Pedestal	— l/m gpm
	Flushing cooler	20 l/m gpm
	Total	31.5 l/m gpm
Lubricant:	Bearing OIL	/qty 800 CC
	Coupling GREASE	/qty 500 g
Weight:	Pump and baseplate	445 kg
	Driver	340 kg
Pump serial No.		

50	Sectional Dwg. No.	215-GDM - 205/2
51	Outline Dwg. No.	215-GDM - 205/1
52	Perform. Curve No.	215-GXM - 205/2

53 REMARKS: API Std. 610-1971 governs unless otherwise stated.

54 NOTE 1) RATIO OF SHUT OFF HEAD TO DIFF HEAD : 1.09

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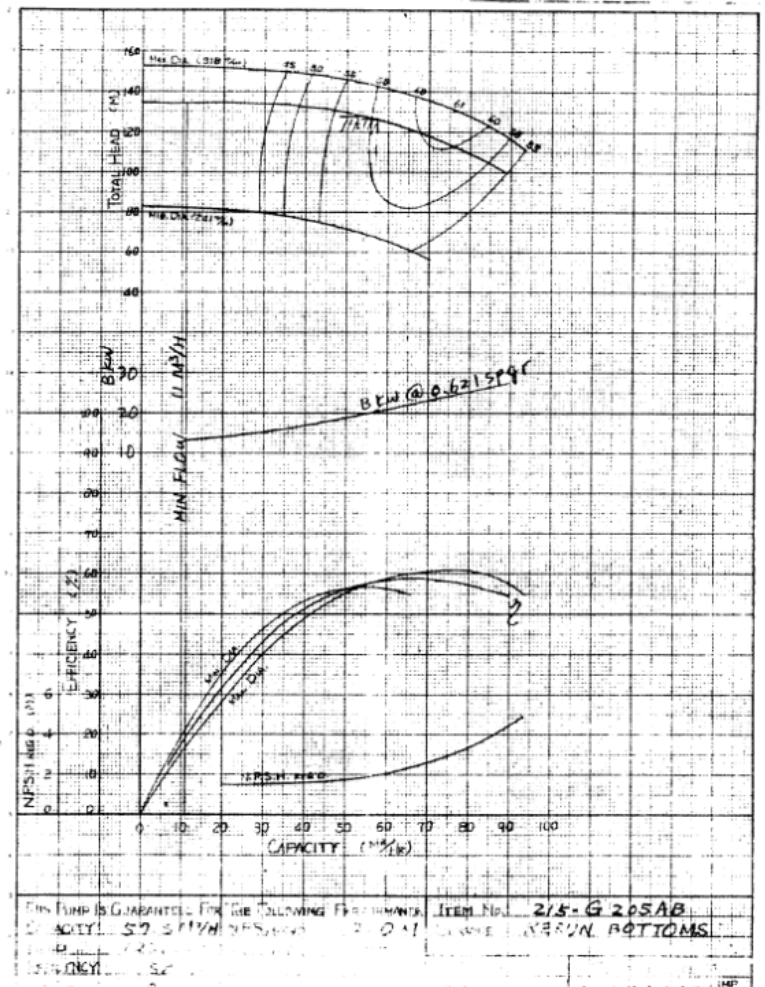
8151A0467

FORM 1768

CENTRIFUGAL PROCESS PUMPS 215-G XM-205/2

RATING CURVE 205AB



THIS PUMP IS GUARANTEED FOR THE FOLLOWING PERFORMANCE. ITEM No. 215-G 205AB
CAPACITY 57.3 m³/H RERUN BOTTOMS
NPSH 2.0 m
SPGR 0.621

1-132

Yeni Pompanın Verileri

FLOWSERVE

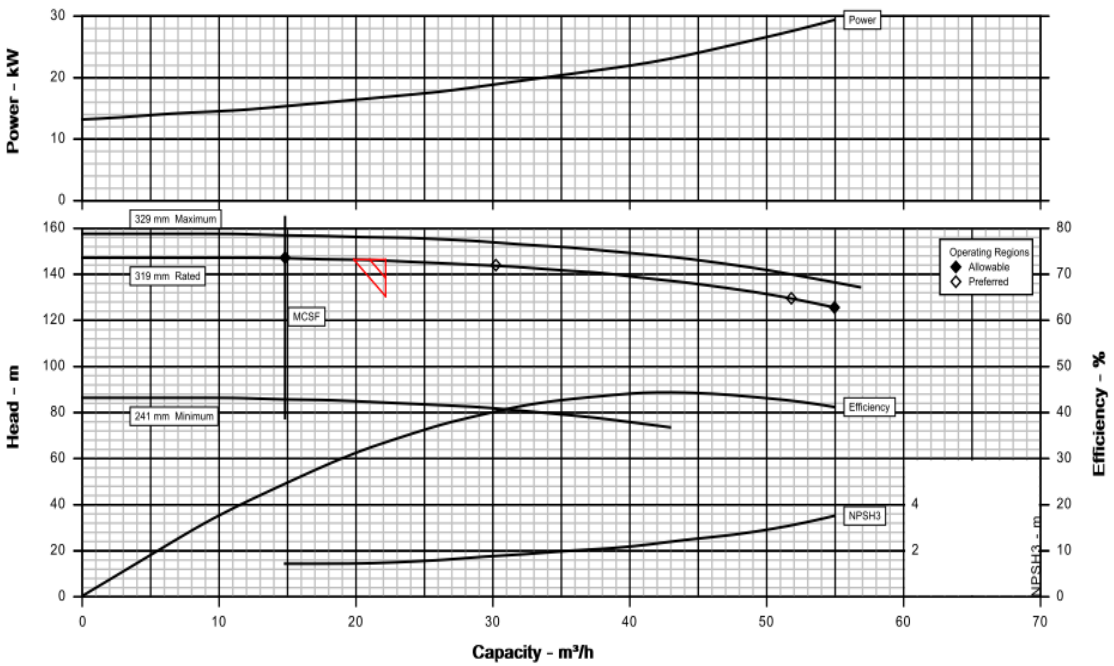
Hydraulic Datasheet

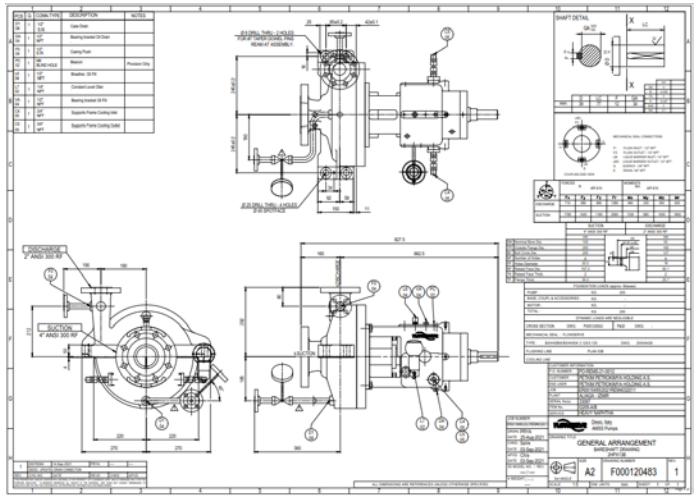
Customer	: PETKIM PETROKIMYA HOLDING A...	Pump / Stages	: 2HPX13B / 1
Customer reference	: -	Based on curve no.	: 2HPX13A-1-1-P001
Item number	: G205 A/B	Flowserve reference	: 3180002554
Service	: Heavy Naphtha	Date	: March 31, 2021

Operating Conditions		Materials / Specification	
Capacity (rated/normal)	: 22.2 m³/h / -	Material column code	: S-6
Water capacity (CQ=1.00)	: -	Pump specification	: -
Total developed head	: 146.00 m	**Other Requirements**	
Water head (CH=1.00)	: -	Hydraulic selection : API 610 11th Edition	
NPSHa/NPSHa less margin	: 2.9 m / -	Construction : API 610 11th Edition	
Maximum suction pressure	: 3.9 kg/cm²g	Test tolerance : API 610 11th Edition	
Liquid		Driver Sizing : Max Power(MCSF to EOC) using SF	
Liquid type	: Other	Performance data based on standard impeller	
Liquid description	: Naphtha	Seal configuration : Double Seal	
Temperature	: 200 °C		
Density / Specific gravity	: - / 0.642		
Solid Size - Actual / Limit	: - / 8.001 mm		
Viscosity / Vapor pressure	: 0.22 cSt / 2.10 kg/cm²a		

Performance

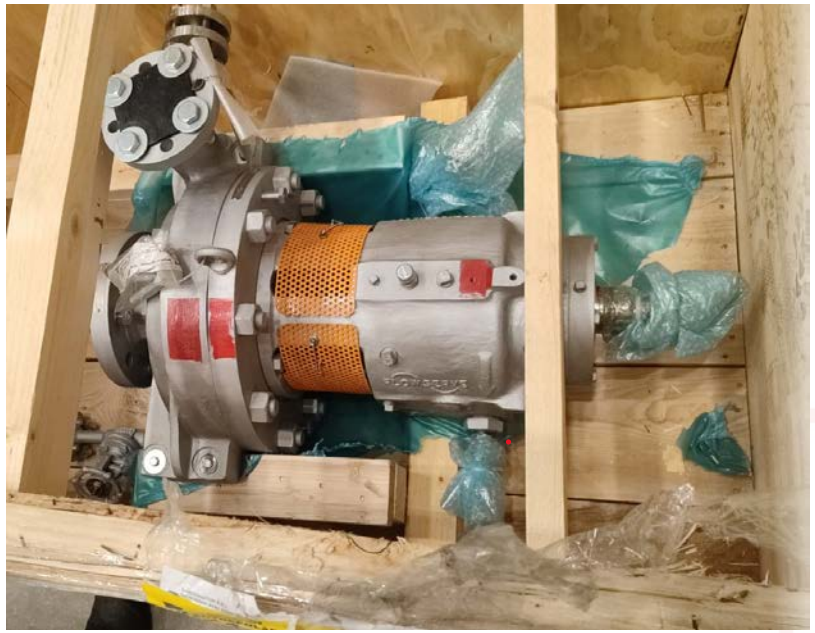
Hydraulic power	: 5.65 kW	Impeller diameter	
Pump speed	: 2950 rpm	Rated	: 319 mm
Pump overall efficiency (CE=1.00)	: 33.5 %	Maximum	: 329 mm
NPSH required (NPSH3)	: 1.5 m	Minimum	: 241 mm
Rated brake power	: 16.8 kW	Ns / Nss	: 558 / 10502 (Metric units)
		Minimum continuous flow	: 14.8 m³/h
Maximum brake power	: 29.4 kW	Maximum head at rated diameter	: 147.55 m
Driver power rating	: 30.0 kW / 40.2 hp	Flow at BEP	: 43.1 m³/h
Casing working pressure	: 13.4 kg/cm²g	Flow as % of BEP	: 51.3 %
(based on shut off @ cut dia/rated SG)		Efficiency at normal flow	: -
Maximum allowable	: 42.2 kg/cm²g	Impeller diameter ratio (rated/max)	: 97.0 %
Hydrostatic test pressure	: 63.3 kg/cm²g	Head rise to shut off	: 1.1 %
Estimated rated seal chamber pressure	: 2.4 kg/cm²g	Total head ratio (rated / max) / (max / rated)	: 93.6 % / 106.8 %

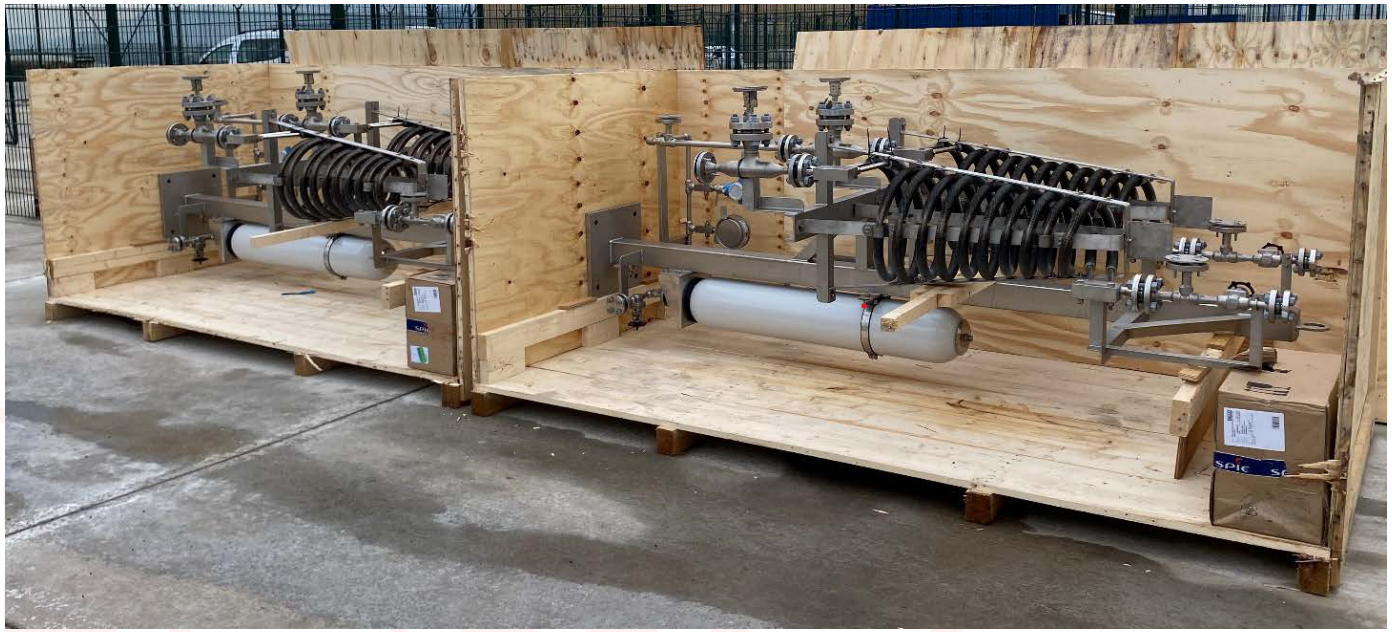




Sahadaki Gözlem

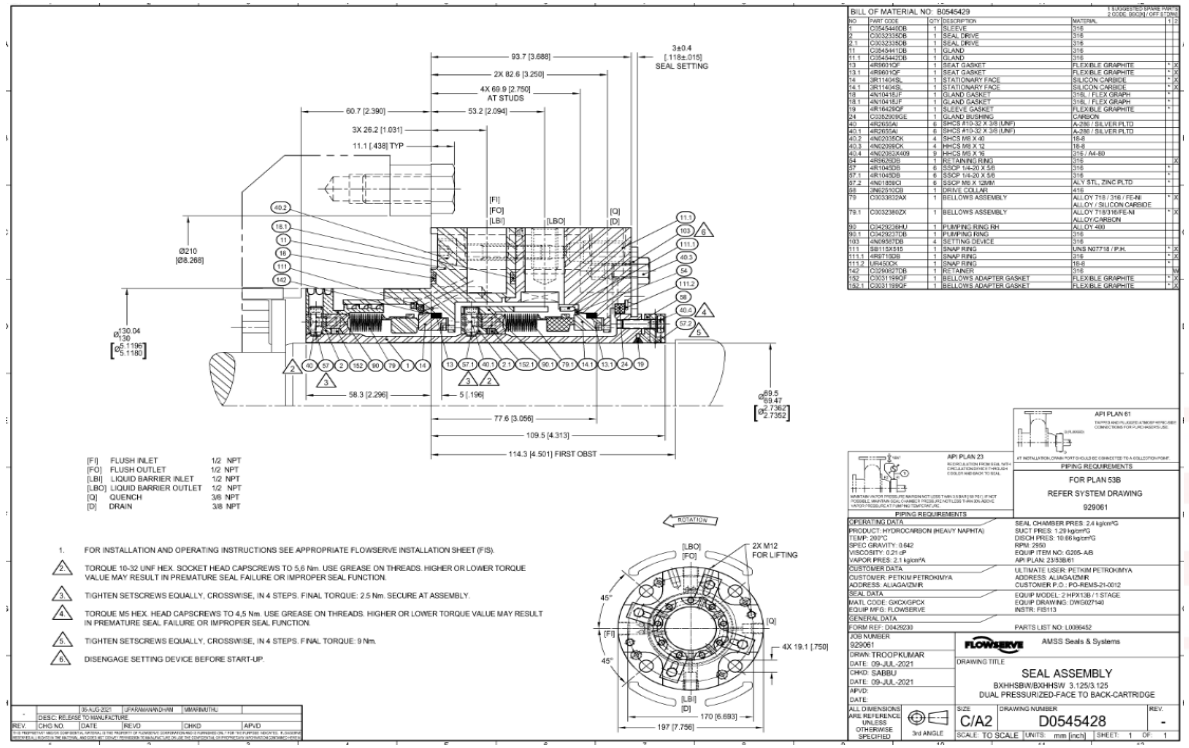
Yeni Pompa , Salmastra ve Salmastra Destek Sisteminin Sahada Teslimatı

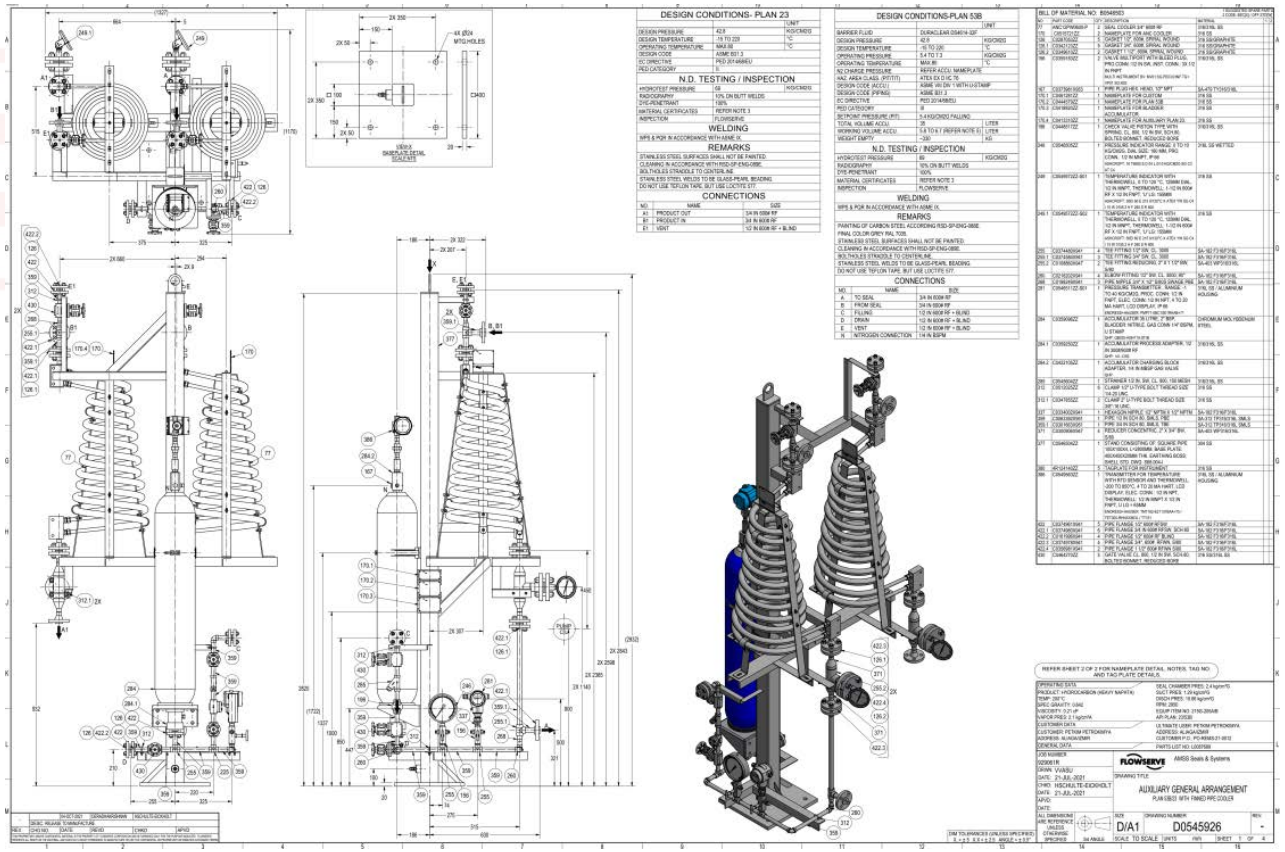




Sahada kurulum öncesi kontroller

Salmastra ve Salmastra Sisteminin Teknik Resimleri

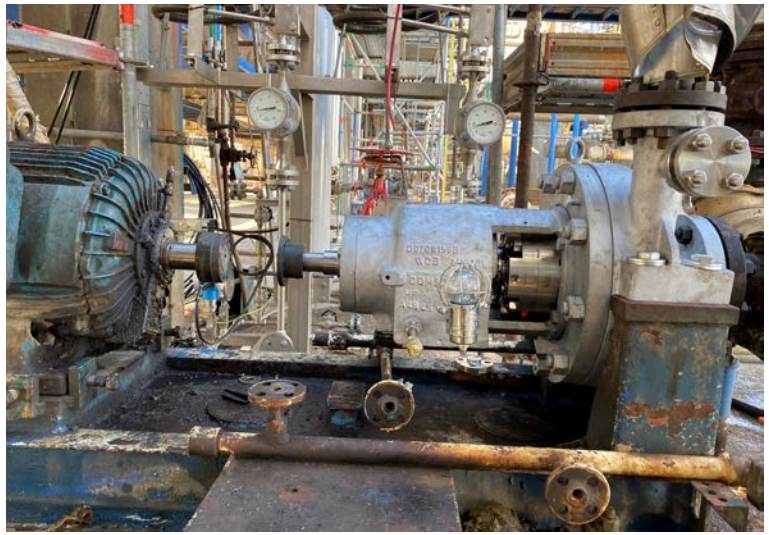




Salmastra Sisteminin Sahaya Montajı

Eski Pompanın Demontajı

Yeni Pompanın Montajı



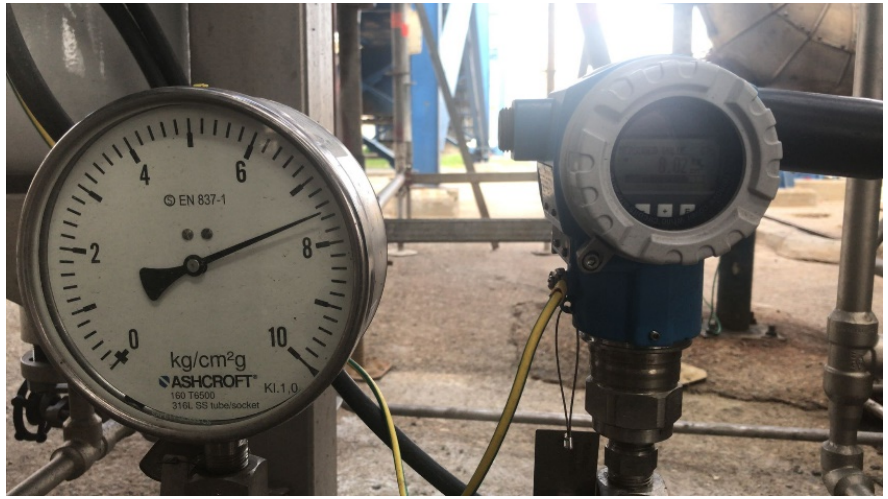
Salmastra Sistemi Arabağlantı Borulaması

Plan 53B Azot ve Bariyer Sıvısı (DURACLEAR F32) Basılması

ÖNCE/SONRA

Pompa ve API Sistemleri Devreye Alında ve Çalıştırlmaya Hazır

Operasyon Sırasında Pompa ve Salmastra Sistemi



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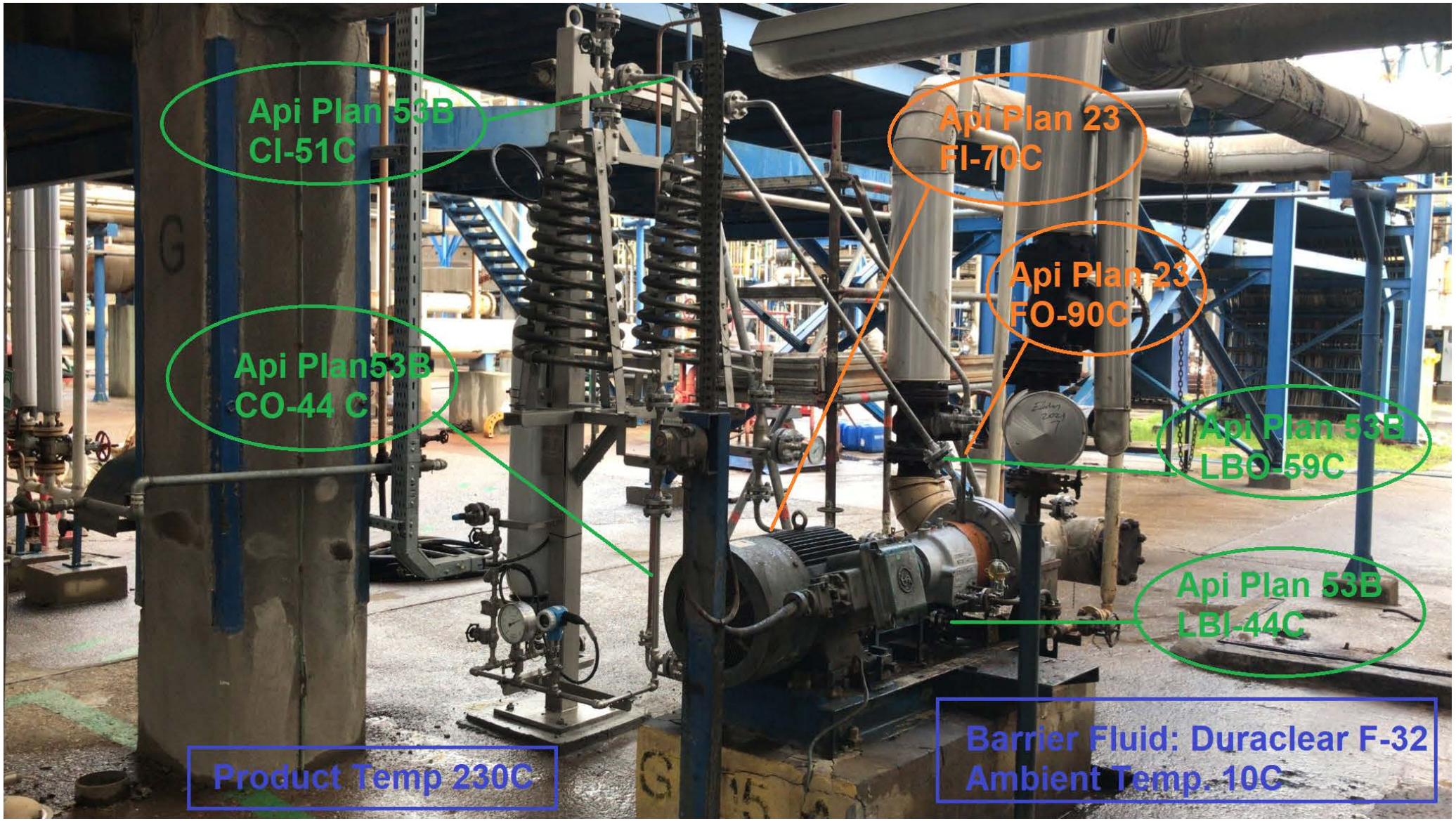

Operasyon Sırasında Pompa ve Salmastra Sistemi

2HPX13B - Hydr. 1 Rev1

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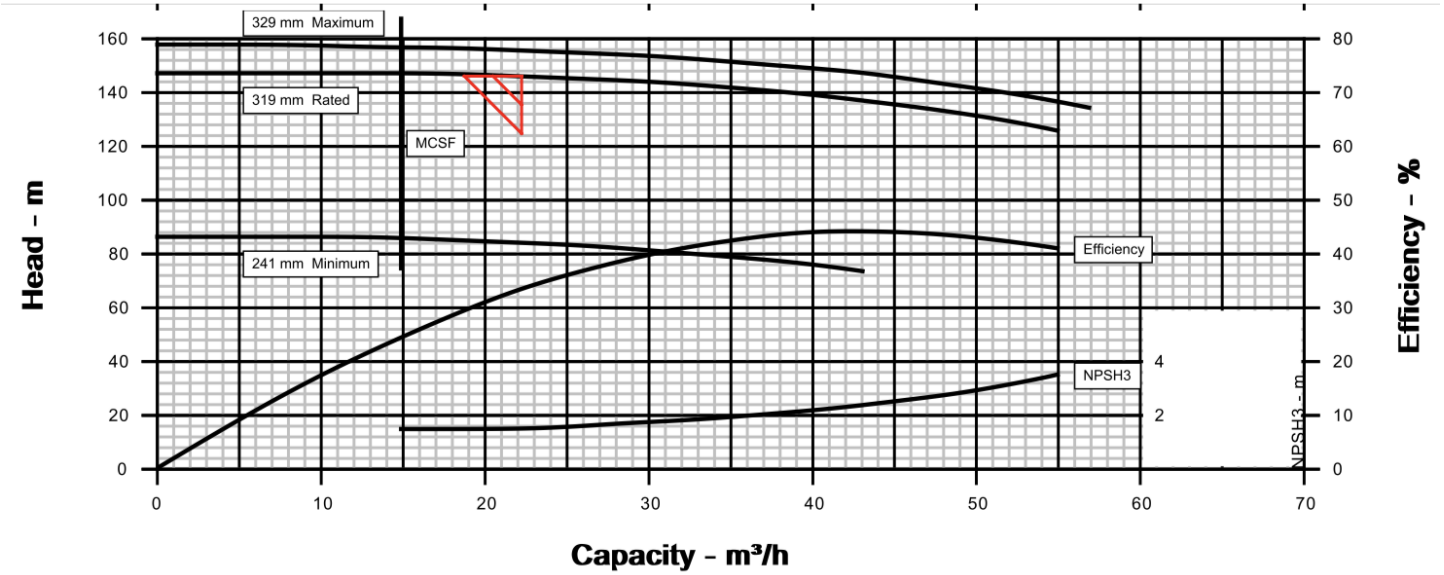
CURVES ARE APPROXIMATE, PUMP IS GUARANTEED FOR ONE SET OF CONDITIONS; CAPACITY, HEAD, AND POWER.

2HPX13B - Hydr. 1 Rev1



Takım Çalışması

Beş Günde Pompa ve Salmastra Sistemi Montajı/Devreye Alınması

İletişim Bilgileri:

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