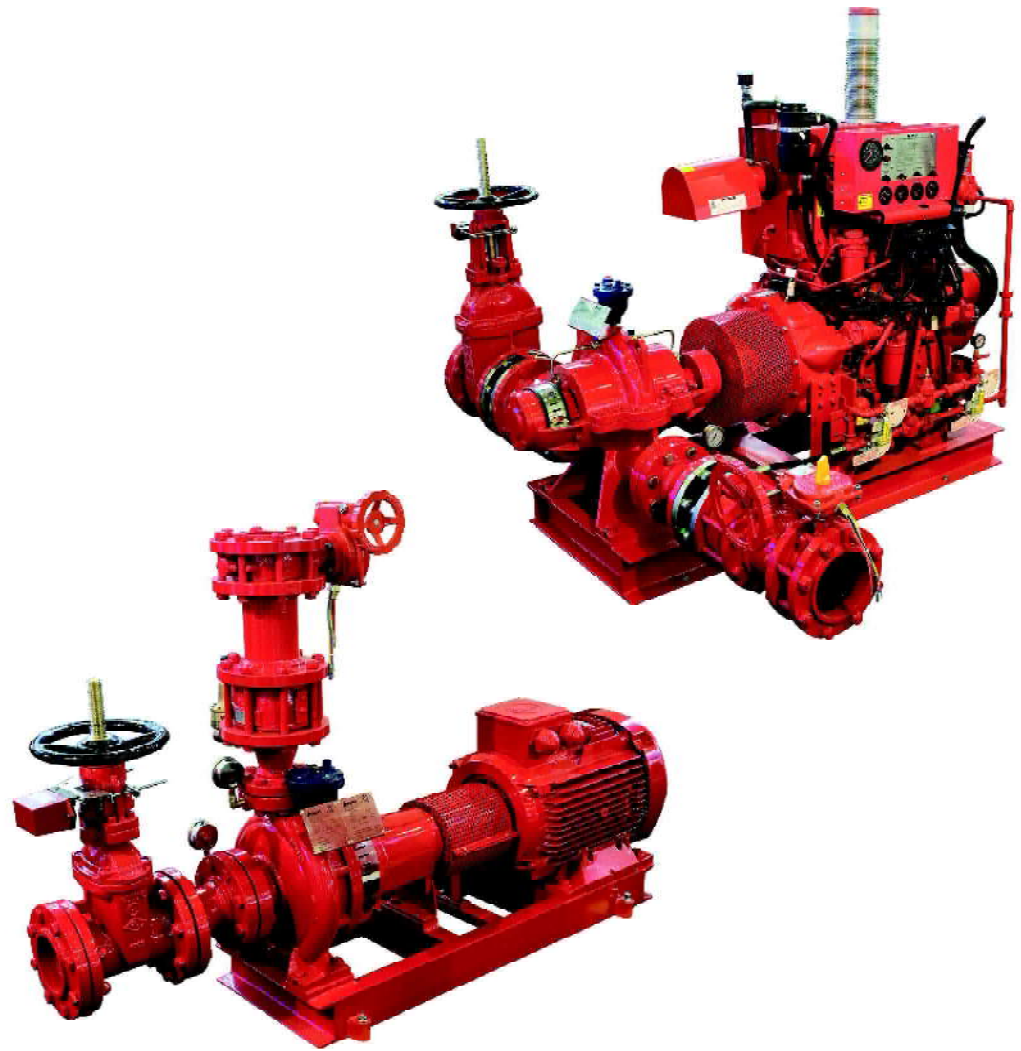


UL 448
FM Class 1311/1319

Standart

SDS / SNK

FIRE PUMPS
YANGIN POMPALARI



SDS/SNK 01 09-11 EN

Who UL is and What UL does:

- UL (Underwriters Laboratories Inc.) is a global independent safety science company offering expertise across five key strategic businesses: Product Safety, Environment, Life & Health, University and Verification Services. Since the year UL founded in 1894, nearly 70,000 manufacturers in 100 countries have produced 20.000 different types of totally 20 billion UL Marked products.
- UL engineers scientifically investigate and test thousands of types of products, materials, constructions and systems to evaluate the electrical, fire and injury risks; the burglary or fire resistance; or the ability to detect, control or limit fires.
- UL has developed 1,200 Standards for Safety, which serve as the bedrock of compliance in over 200 industries.
- There is an "Online Certifications Directory" in UL's website and all the products listed by UL can be found here.

UL Safety Standard: UL 448

- The requirements of this standard cover design and test features of centrifugal fire pumps intended for use in water-supply systems for fire-protection service.
- The pumps covered by these requirements are intended for installation and use in accordance with the Standard for the Installation of Stationary Pumps for Fire Protection, NFPA 20.

Who FM is and What FM does:

- FM (Factory Mutual) Global is one of the world's largest business property insurers who also serves engineering solutions to be protected against basicly fire, natural disaster or other types of property risk.
- FM Approvals is a unit of FM Global who certifies industrial and commercial products and services for companies. When a product or service meets the standards of FM Approvals, it is issued the "FM APPROVED" mark to signify it will perform as expected.
- Currently there are 45.000 certified products and services and these are listed in "FM Approval Guide" which can be found in FM website.

FM Approvals Standard: 1311 / 1319

- FM Class 1311 states approval criteria for horizontal or vertical split case centrifugal fire pumps while FM Class 1319 states about horizontal end suction centrifugal fire pumps that supply water to fire protection systems.
- The requirements in these standards are mainly based on ANSI Hydraulics Institute (HI) and NFPA 20 standards.

UL Kimdir, Ne yapar:

- UL (Underwriters Laboratories Inc.) 5 ana stratejik dalda (Ürün Güvenliği, Çevre, Sağlık, Üniversite ve Doğrulama Servisleri) faaliyet gösteren uluslararası bağımsız bir mühendislik ve güvenlik şirkettir. 1894 yılında kurulduğundan bugüne kadar 100'ü aşkın ülkede yaklaşık 70.000 üreticinin ürettiği 20.000 farklı çeşitte toplam 20 milyar civarında UL damgalı ürün piyasada bulunmaktadır.
- UL mühendisleri binlerce çeşit ürünü, malzemeyi, yapıyı ve sistemi, elektrik, yangın ve yaralanma risklerine karşı bilimsel olarak değerlendirirler ve test ederler.
- UL, güvenilirlik konusunda birbirinden farklı ürün ve sistemleri kapsayan toplam 1200 adet standart geliştirmiştir ve bu standartlar 200' den fazla endüstri için temel yapı taşı olmuştur.
- UL' in resmi internet sitesinde ürün sertifikalarının bulunduğu bir rehber bulunmaktadır ve bu rehberde UL sertifikalı tüm ürünlere ve bu ürünleri üreten üreticilere ulaşılabilir.

UL Güvenlik Standardı: UL 448

- UL 448 standardı, yangın sistemlerinde kullanılan pompaların tasarımlarının nasıl yapılması gerektiğini ve test koşullarını içermektedir.
- Bu standardın temelini NFPA 20 "Yangın Sistemleri için Pompaların Kurulumu" standardı oluşturmaktadır. Birçok özellik NFPA 20' deki gibidir ancak fazla olarak birkaç husus daha eklenerek gereklilikler genişletilmiştir.

FM Kimdir, Ne Yapar:

- FM (Factory Mutual) Global, temel olarak yangın, doğal afet ve benzeri risklere karşı korunmak üzere mühendislik çözümleri sunan dünyanın en büyük sigorta şirketlerinden biridir.
- FM Approvals, FM Global' in şirketler için endüstriyel ve ticari ürün ve servisleri sertifikalandıran birimidir. Bir ürün veya servis FM Approvals standartlarına uygunluğu sağlarsa, ürüne "FM APPROVED" markalaması yapılır.
- Şu ana kadar toplam 45.000 çeşit ürün / servis FM tarafından sertifikalandırılmıştır ve bu ürünler FM' in resmi internet sitesinde "FM Approval Guide" içerisinde yayınlanmaktadır.

FM Onay Standardı: 1311 / 1319

- FM 1311 standardı, yatay / düşey ekselel ayrılabilir gövdeli santrifüj yangın pompaları için, FM 1319 ise yatay uçtan emişli santrifüj yangın pompaları için onay kriterlerini içermektedir.
- Bu standarttaki gereklilikler temel olarak ANSI Hidrolik Enstitüsü (HI) ve NFPA 20 standartları esaslıdır.

Design Features according to UL & FM:

- Only the specified capacities in the below table are allowed for rated capacity. For capacities higher than 5000 GPM, 500 GPM increments are allowed.

GPM	m ³ /h	GPM	m ³ /h	GPM	m ³ /h
25	5.68	400	90.8	2000	454
50	11.3	450	102.2	2500	568
100	22.7	500	113.5	3000	681
150	34.0	750	170	3500	795
200	45.4	1000	227	4000	909
250	56.8	1250	284	4500	1022
300	68.1	1500	341	5000	1136

- All interior bolt or screw that are exposed to pumped liquid shall be of rolled bronze or corrosion resistant material
- The pump shall be provided with automatic air-release valve, circulation relief valve and pressure gauges
- Bearings shall have an L-10 rating of not less than 5000 hours at maximum load.
- The pumps shall be provided with at least four packing rings plus a lantern ring. The lantern ring may be permitted to replace one ring of packing.
- Impellers, wear rings, shafts, lantern rings, glands shall be made of corrosion resistant material.
- Following material specifications are applied to STANDART UL/FM fire pumps:

UL/FM' e göre Tasarım Özellikleri:

- Beyan edilen debi değeri sadece aşağıdaki tabloda belirtilen debi değerlerinde olmalıdır. Bunlarınharicindeki debiler kabul edilmez. 5000 GPM' den sonra debi değeri 500 GPM adımıyla artmaya devam eder.

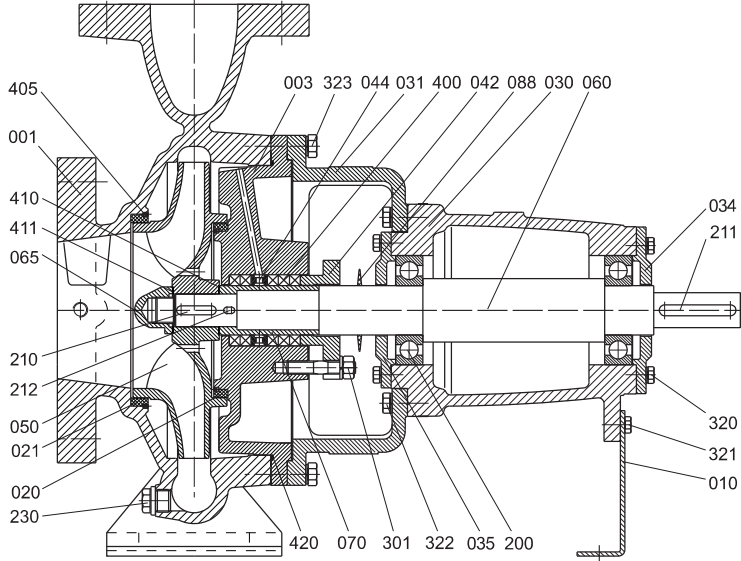
- Basılan sıvı ile temas eden tüm civatalar, vidalar vs bronz veya korozyona dayanıklı malzemeden imal edilmelidir.
- Yangın pompası, otomatik hava tahliye ventili, gövde soğutma vanası ve manometreler ile birlikte tedarik edilmelidir.
- Rulmanlar maksimum yüklemeye durumunda en az 5000 saat L-10 ömürü olmalıdır.
- Yangın pompaları en az 4 sarım yumuşak salmastra ve aralarında bir adet sulama halkası ile birlikte tedarik edilmelidir. Sulama halkası konulmayacaksa en az 5 sarım yumuşak salmastra olmalıdır.
- Yangın pompası çarkı, aşınma halkaları, mili, sulama halkası ve glenleri korozyona dayanıklı malzemeden imal edilmelidir.
- STANDART marka UL/FM yangın pompaları aşağıdaki malzeme kombinasyonuna göre imal edilmektedir:

Part List Parça Listesi	Definition Tanım	DIN 17007	EN-DIN	ASTM
Casing Gövde	Nodular cast iron Sfero döküm	0.7040	GGG 40 (GJS-400-15)	A 536 Gr. 60-40-18
Impeller Çark	Cast bronze Bronz döküm	2.1050.01	G-CuSn 10	B 584 C 90700
Shaft Mil	Stainless steel Paslanmaz çelik	1.4021	X20 Cr 13	A 276 Type 420
Shaft sleeve Mil burcu	Stainless steel Paslanmaz çelik	1.4401	X5 Cr Ni Mo 17-12-2	A 276 Type 316

Sectional Drawings Kesit Resimleri

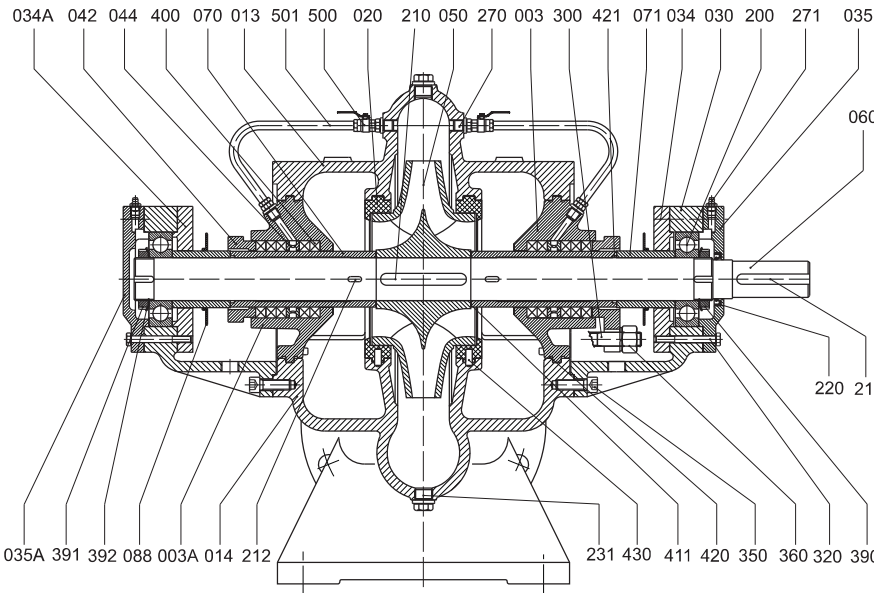


SNK 50-250 , SNK 65-250 , SNK 80-250



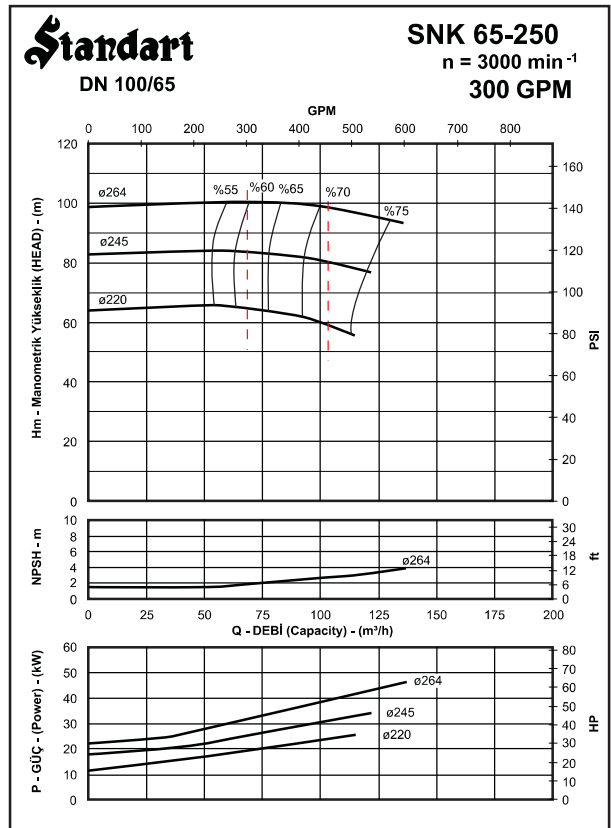
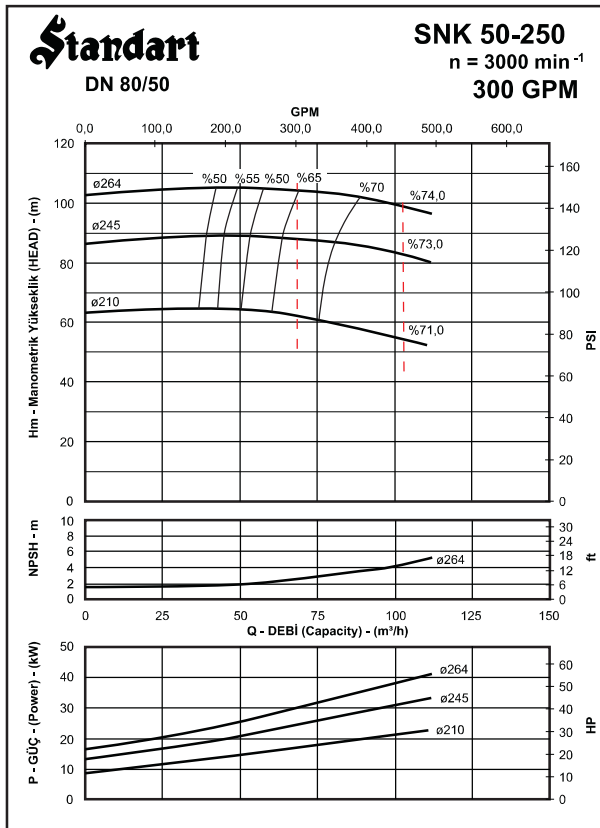
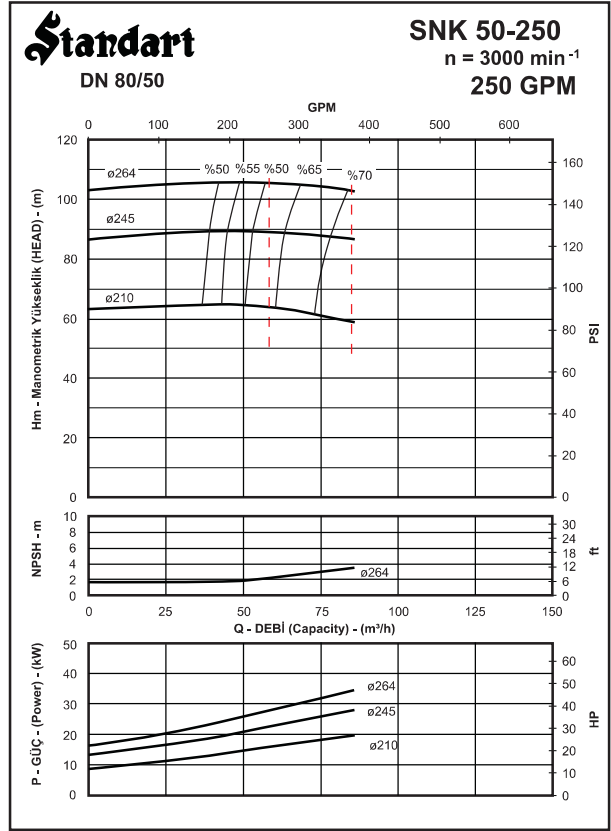
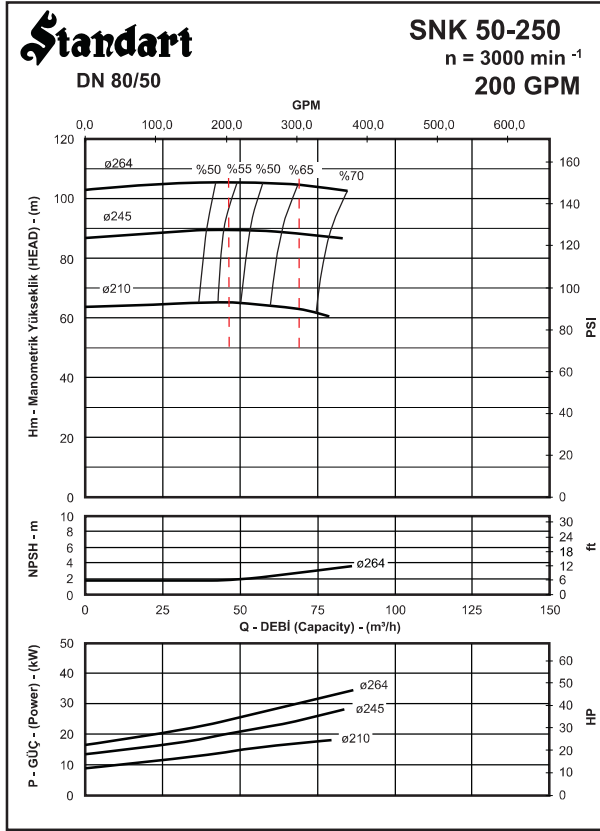
Part Number Parça No	Part Name	Parçanın Adı
001	Volute Casing	Salyangoz Gövde
003	Stuffing Box	Salmastra Yatağı
010	Support Foot	Destek Ayak
020	Wear Ring (back)	Aşınma Halkası (arka)
021	Wear Ring (front)	Aşınma Bileziği (ön)
030	Bearing Housing	Rulman Yatağı
031	Bearing Bracket Lantern	Ara Parça
034	Bearing Cover (outboard)	Rulman Kapağı (dış)
035	Bearing Cover (inboard)	Rulman Kapağı (iç)
042	Stuffing Box Gland	Glen
044	Lantern Ring	Sulama Halkası
050	Impeller	Çark
060	Shaft	Mil
065	Impeller Nut	Çark Somunu
070	Shaft Protecting Sleeve	Mil Burcu
088	Thrower	Su Siperi
200	Ball Bearing	Bilyalı Rulman
210	Impeller Key	Çark Kaması
211	Coupling Key	Kaplin Kaması
212	Sleeve Key	Burç Kaması
230	Drain Plug	Boşaltma Tapası
301	Stud+Nut+Washer	Saplama+Somun+Pul
320	Hex. Head Bolt	Cıvata
321	Hex. Head Bolt	Cıvata
322	Hex. Head Bolt	Cıvata
323	Hex. Head Bolt	Cıvata
400	Stuffing Box Packing	Yumuşak Salmastra
405	Set Screw	Setuskur
410	Gasket	Conta
411	Gasket	Conta
420	O-Ring	O-Ring

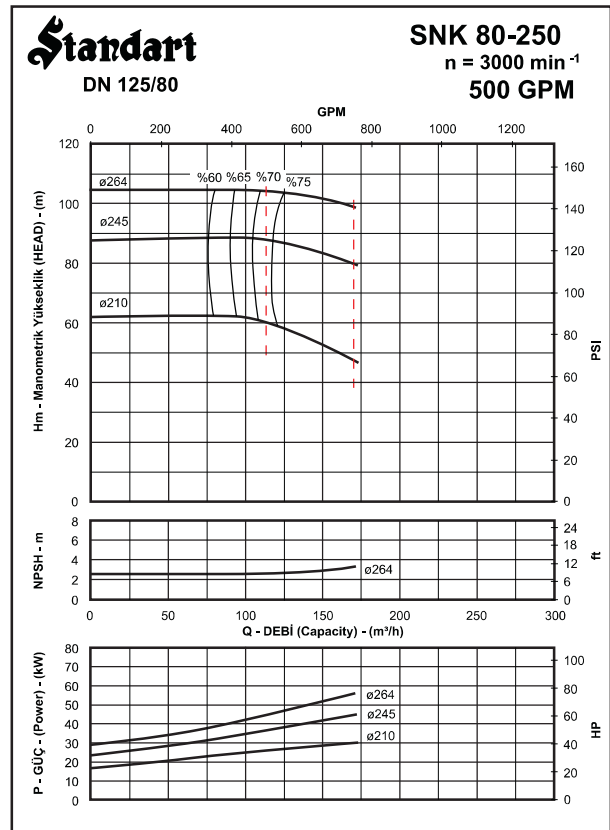
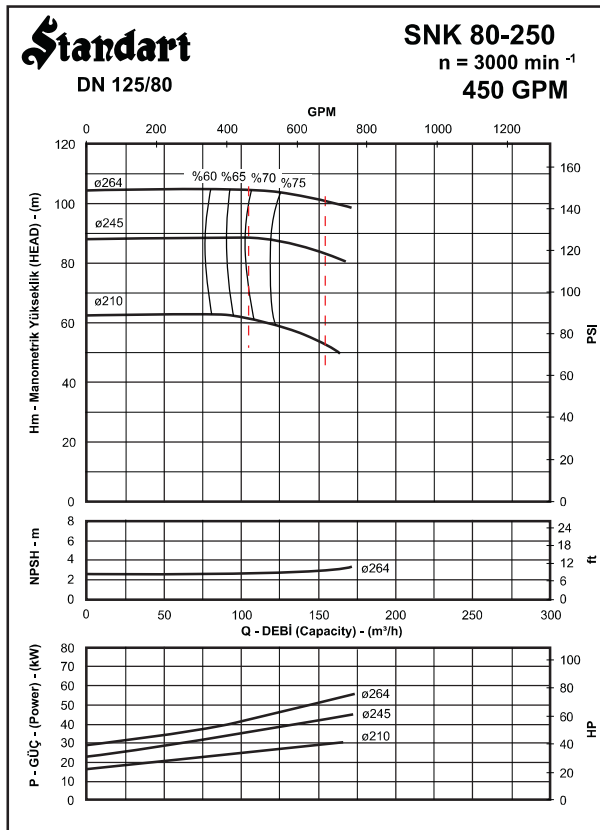
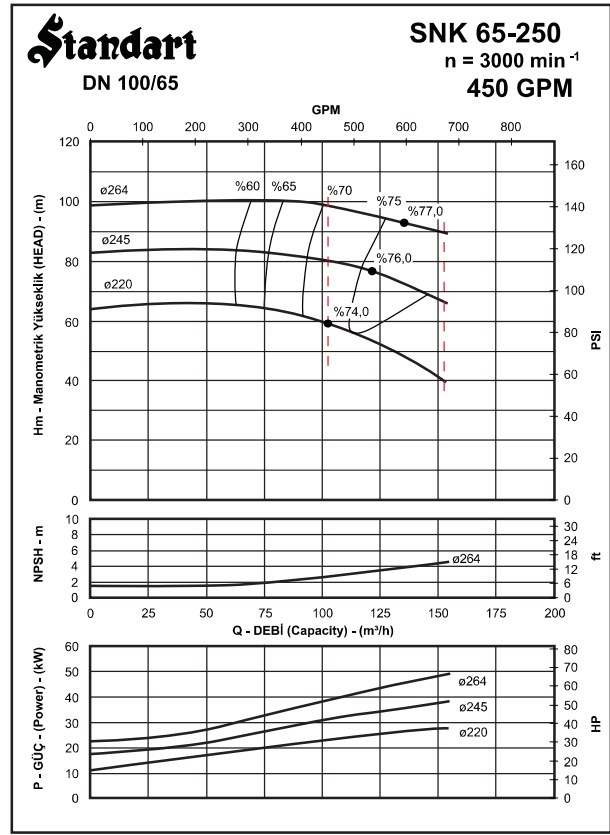
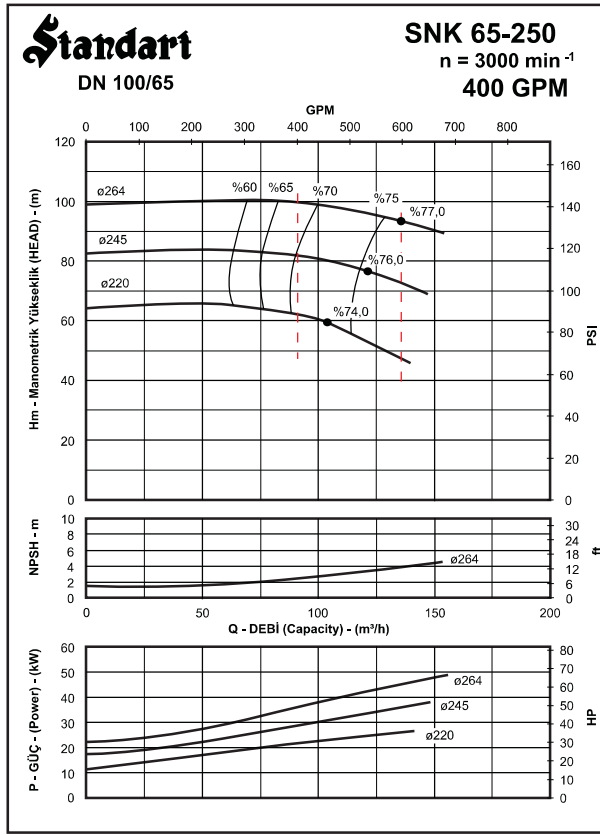
SDS 100-250 , SDS 125-315

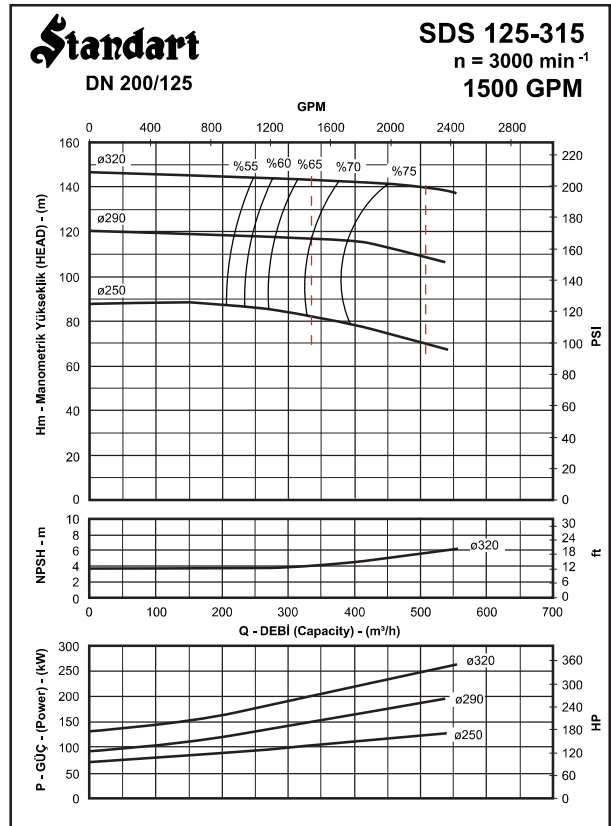
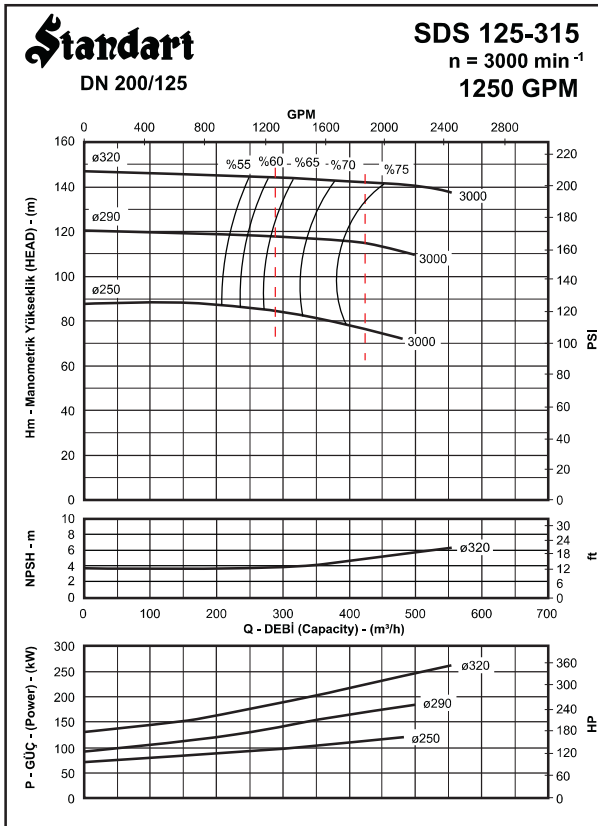
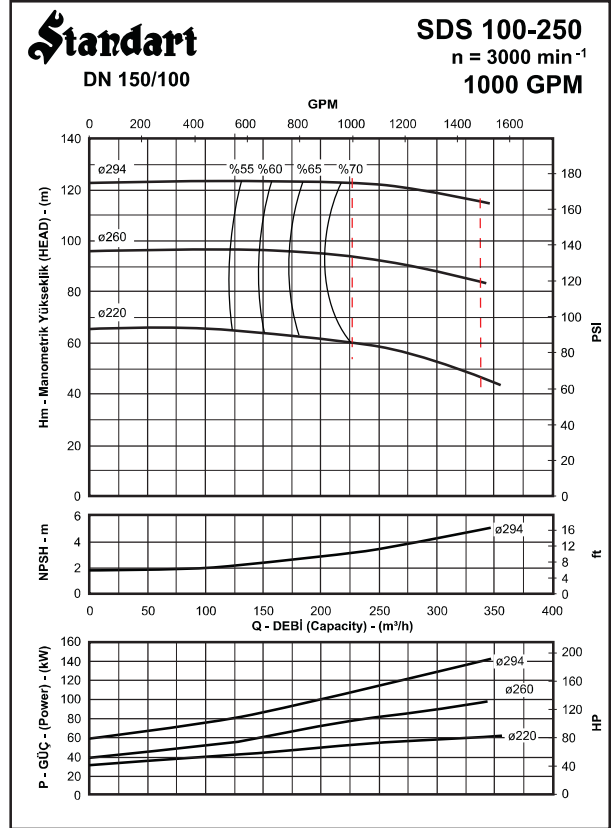
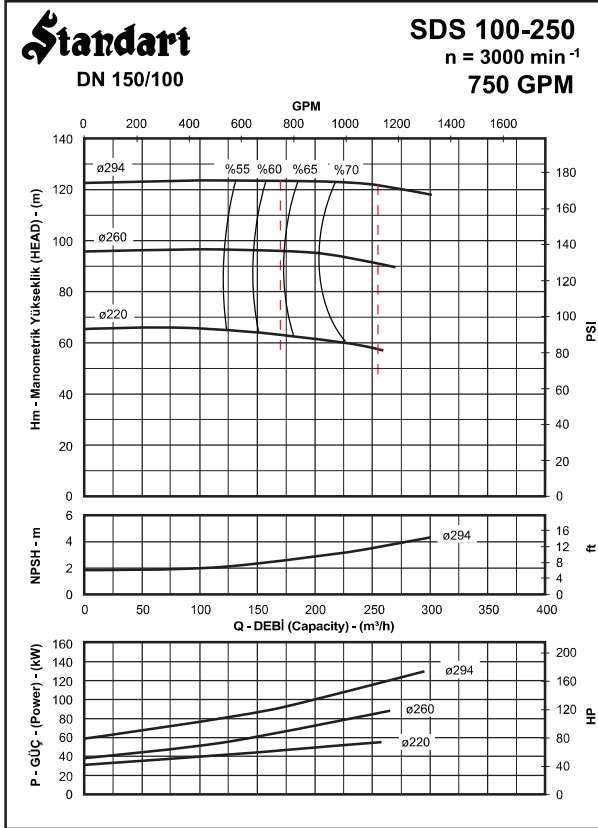


Part Number Parça No	Part Name	Parçanın Adı
003	Stuffing Box (right side)	Salmastra Kutusu (sağ taraf)
003A	Stuffing Box (left side)	Salmastra Kutusu (sol taraf)
013	Volute Casing (top)	Gövde (üst)
014	Volute Casing (bottom)	Gövde (alt)
020	Wear Ring	Aşınma Halkası
030	Bearing Housing	Rulman Yatağı
034	Bearing Cover (inboard)	Rulman Kapağı (iç)
034A	Bearing Cover (inboard)	Rulman Kapağı (iç)
035	Bearing Cover (outboard)	Rulman Kapağı (dış)
035A	Bearing Cover (outboard)	Rulman Kapağı (dış)
042	Stuffing Box Gland	Glen
044	Lantern Ring	Sulama Halkası
050	Impeller	Çark
060	Shaft	Mil
070	Shaft Protecting Sleeve	Mil Burcu
071	Sleeve (spacer)	Salmastra Burcu
088	Thrower	Su Siperi
200	Ball Bearing	Bilyalı Rulman
210	Impeller Key	Çark Kaması
211	Coupling Key	Kaplin Kaması
212	Key	Burç Kaması
220	Oil Seal	Yağ Keçesi
231	Drain Plug	Boşaltma Tapası
270	Nipple	Nipel
271	Grease Nipple	Gres Nipeli
300	Stud	Saplama (glen)
320	Hex. Head Bolt	Cıvata (rulman kapağı)
350	Allen Screw	Allen Cıvata
360	Nut	Somun (glen)
390	Locknut (non drive end)	Emniyet Somunu
391	Locknut (drive end)	Emniyet Somunu
392	Lock Washer	Emniyet Segmanı
400	Stuffing Box Packing	Yumuşak Salmastra
411	Gasket	Conta
420	O-Ring	O-Ring
421	O-Ring	O-Ring
430	Pin	Pim
500	Valve	Vana
501	Flushing Pipe	Boru

Performance Curves Karakteristik Eğriler







Selection Table Seçim Tablosu

UL Listed & FM Approved Fire Pumps for 3000 rpm UL Listeli & FM Onaylı Yangın Pompaları 3000 d/dak									
Pump Type Pompa Tipi	Capacity Debi (GPM / m3/h)	Pressure Basınç (bar/psi)	Power Güç (%100) (kW)	Power Güç (%150) (kW)	Diesel Engine Dizel Motor CLARKE Model	Diesel Engine Rated Power Dizel Motor Anma Gücü kW /HP	Electric Motor Rated Power Elektrik Motoru Anma Gücü (kW)		
SNK 50-250	200 / 45,4	6,4 / 93	13,5	16,6	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	15		
		7 / 101,5	15	18,4	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	18,5		
		8 / 116	17,6	21,6	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	22		
	250 / 56,8	9 / 130,5	9 / 130,5	20,4	24,9	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	30	
			10,34 / 150	24,1	29,3	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	30	
			6,27 / 91	15,3	19,1	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	18,5	
	300 / 68,1	8 / 116	7 / 101,5	17,1	21,3	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	18,5	
			8 / 116	19,8	24,2	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	22	
			9 / 130,5	22,7	28,4	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	30	
	SNK 65-250	300 / 68,1	10,34 / 150	26,7	33	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	30	
			6,06 / 88	16,6	21,1	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	18,5	
			7 / 101,5	19,1	24,2	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	22	
400 / 90,8		8 / 116	8 / 116	22	28,1	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	30	
			9 / 130,5	25,1	32,1	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	30	
			10,2 / 148	29,1	37,2	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	37	
450 / 102,2		7 / 101,5	6,34 / 92	19,6	23,6	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	22	
			7 / 101,5	21,7	26,4	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	30	
			8 / 116	25,1	30,9	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	30	
500 / 113,5		9 / 130,5	9 / 130,5	28,8	35,6	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	37	
			9,78 / 142	32	39,7	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	37	
			6,06 / 88	22,4	26,8	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	30	
SNK 80-250	400 / 90,8	7 / 101,5	25,9	31,4	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	30		
		8 / 116	29,7	36,6	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	37		
		9 / 130,5	33,9	42,2	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	45		
	450 / 102,2	8 / 116	9,78 / 142	37,2	46,7	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	45	
			5,79 / 84	23,6	27,7	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	30	
			7 / 101,5	28,2	33,9	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	37	
	500 / 113,5	9 / 130,5	8 / 116	32,3	39,4	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	37	
			9 / 130,5	36,6	45,4	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	45	
			9,71 / 141	39,7	49,7	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	45	
	550 / 123,5	6 / 87	6 / 87	25,9	29,8	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	30	
			7 / 101,5	30	35,4	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	37	
			8 / 116	34,5	40,7	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	37	
600 / 133,5	9 / 130,5	9 / 130,5	39,1	47,5	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	45		
		10,2 / 148	45,1	53	JU4H-UF14, JU4R-UF23 (Rad)	53/71, 58/78	55		
		5,79 / 84	26,5	30,6	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	30		
650 / 143,5	7 / 101,5	7 / 101,5	31,8	37,7	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	37		
		8 / 116	36,5	44	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	45		
		9 / 130,5	41,4	50	JU4H-UF14, JU4R-UF13 (Rad)	53/71, 50/66,5	55		
700 / 153,5	10,2 / 148	10,2 / 148	47,5	57,8	JU4H-UF24, JU4R-UF23 (Rad)	62/83, 58/77	55		

Selection Table Seçim Tablosu



UL Listed & FM Approved Fire Pumps for 3000 rpm UL Listeli & FM Onaylı Yangın Pompaları 3000 d/dak									
Pump Type Pompa Tipi	Capacity Debi (GPM / m3/h)	Pressure Basınç (bar/psi)	Power Güç (%100) (kW)	Power Güç (%150) (kW)	Diesel Engine Dizel Motor CLARKE Model	Diesel Engine Rated Power Dizel Motor Anıma Gücü kW/HP	Electric Motor Rated Power Elektrik Motoru Anıma Gücü (kW)		
SDS 100-250	750 / 170	6,13 / 89	46,6	53	JU4H-UF14 , JU4R-UF23 (Rad)	53/71, 58/78	55		
		7 / 101,5	51,2	61,8	JU4H-UF24	62/83	75		
	1000 / 227	8 / 116	56,8	70,9	JU4H-UF34 , JU4R-UF53 (Rad)	86/115, 99/133	75		
		9 / 130,5	62,6	78,8	JU4H-UF34 , JU4R-UF53 (Rad)	86/115, 99/133	75		
		10 / 145	70,3	90,8	JU4H-UF54 , JU4R-UF53 (Rad)	108/145, 99/133	90		
		11 / 159,5	79,7	102	JU4H-UF54	108/145	110		
	1250 / 284	11,85 / 172	90,8	115,5	JU6H-UF34	131/175	110		
		5,86 / 85	52,1	60,9	JU4H-UF24	62/83	75		
		7 / 101,5	60,5	74,9	JU4H-UF34 , JU4R-UF53 (Rad)	86/115, 99/133	75		
		8 / 116	68,3	87,7	JU4H-UF54 , JU4R-UF53 (Rad)	108/145, 99/133	90		
9 / 130,5		76,5	101	JU4H-UF54	108/145	110			
10 / 145		85,9	113	JU6H-UF34	131/175	110			
SDS 125-315	1500 / 340	11 / 159,5	96	126	JU6H-UF34	131/175	132		
		11,8 / 171	107	138,6	JU6H-UF54	161/216	132		
	1250 / 284	8,06 / 117	93,1	108	JU4H-UF54	108/145	110		
		9 / 130,5	104	124	JU6H-UF34	131/175	132		
		10 / 145	117	142	JU6H-UF54	161/216	160		
		11 / 159,5	130	160	JU6H-UF54	161/216	160		
	1500 / 340	12 / 174	146	179	JU6H-UF84	205/275	185		
		13 / 188,5	164	200	JU6H-UF84	205/275	200		
		13,72 / 199	178	216	-	-	250		
		7,72 / 112	98,6	115,5	JU6H-UF34	131/175	110		
9 / 130,5		115	145	JU6H-UF54	161/216	132			
10 / 145		129	159	JU6H-UF54	161/216	160			
1500 / 340	11 / 159,5	144	178	JU6H-UF84	205/275	185			
	12 / 174	161	200	JU6H-UF84	205/275	200			
	13 / 188,5	179	223	-	-	250			
	13,65 / 198	193	239	-	-	250			

Certificate of Compliance

Certificate Number 20100429-EX15693
Report Reference EX15693, 2010 April 29
Issue Date 2010 April 29



STANDART POMPA VE MAKINA SAN VE TIC AS

IDOS ORGANIZE SAN BOL
2 CAD N9 Y DUDULLU
UMRANIYE TURKEY

CENTRIFUGAL FIRE PUMPS, SPLIT CASE

Models: SDS 100-250 and SDS 125-315

Issued to:

*This is to certify that
representative samples of*

*Have been investigated by Underwriters Laboratories Inc.® (UL) or any authorized
licensee of UL in accordance with the Standard(s) indicated on this Certificate.*

Standard(s) for Safety:

Pumps for Fire-Protection Service, UL 448

Additional Information: See UL On-Line Certification Directory at www.ul.com for additional information.

Only those products bearing the UL Listing Mark should be considered as being covered by UL's Listing and Follow-Up Service.

The UL Listing Mark generally includes the following elements: the symbol UL in a circle, with the word "LISTED", a control number (may be alphanumeric) assigned by UL, and the product category name (product identifier) as indicated in the appropriate UL Directory.

Look for the UL Listing Mark on the product

Issued by:
William R. Carney
Director, North American Certification Programs
Underwriters Laboratories Inc.
For questions, please contact a local UL Customer Service Representative at <http://www.ul.com/global/eng/pages/corporate/contact>.

Certificate of Compliance

Certificate Number 20100608-EX15743
Report Reference EX15743, 2010 April 29
Issue Date 2010 June 8



STANDART POMPA VE MAKINA SAN VE TIC AS

IDOS ORGANIZE SAN BOL
2 CAD N9 Y DUDULLU
UMRANIYE TURKEY

CENTRIFUGAL FIRE PUMPS, END SUCTION

Model designation: SNK 50-250, SNK 65-250, and SNK 80-250

Issued to:

*This is to certify that
representative samples of*

*Have been investigated by Underwriters Laboratories Inc.® (UL) or any authorized
licensee of UL in accordance with the Standard(s) indicated on this Certificate.*

Standard(s) for Safety:

Pumps for Fire-Protection Service, UL 448

Additional Information: See UL On-Line Certification Directory at www.ul.com for additional information.

Only those products bearing the UL Listing Mark should be considered as being covered by UL's Listing and Follow-Up Service.

The UL Listing Mark generally includes the following elements: the symbol UL in a circle, with the word "LISTED", a control number (may be alphanumeric) assigned by UL, and the product category name (product identifier) as indicated in the appropriate UL Directory.

Look for the UL Listing Mark on the product

Issued by:
William R. Carney
Director, North American Certification Programs
Underwriters Laboratories Inc.
For questions, please contact a local UL Customer Service Representative at <http://www.ul.com/global/eng/pages/corporate/contact>.



Certificate of Compliance

This certificate is issued for the following:

**CENTRIFUGAL FIRE PUMPS
(HORIZONTAL END SUCTION TYPE)**

MODELS SNK 50-250, SNK 65-250 and SNK 80-250

Prepared for:

Standart Pompa ve Mak. San. Tic. A.S.
Dudullu Organize San. Böl.
2. Cadde, No. 9
Esenkent - Ümraniye
Istanbul, Turkey

Manufactured at:

Standart Pompa ve Mak. San. Tic. A.S.
Dudullu Organize San. Böl.
2. Cadde, No. 9
Esenkent - Ümraniye
Istanbul, Turkey

FM Approvals Class: 1319

Approval Identification: 0003039074

Approval Granted: June 9, 2011

Said Approval is subject to satisfactory field performance, continuing follow-up Facilities and Procedures Audits, and strict conformity to the constructions as shown in the Approval Guide, an online resource of FM Approvals.

For more than 160 years FM Approvals has partnered with business and industry to reduce property losses.

Richard B. Dunne
Group Manager – Fire Protection
FM Approvals
1151 Boston-Providence Turnpike
Norwood, MA 02062



Member of the FM Global Group



Certificate of Compliance

This certificate is issued for the following:

**CENTRIFUGAL FIRE PUMPS
(AXIAL SPLIT-CASE TYPE)**

MODELS SDS 100-250 AND SDS 125-315

Prepared for:

Standart Pompa ve Mak. San. Tic. A.S.
Dudullu Organize San. Böl.
2. Cadde, No. 9
Esenkent - Ümraniye
Istanbul, Turkey

Manufactured at:

Standart Pompa ve Mak. San. Tic. A.S.
Dudullu Organize San. Böl.
2. Cadde, No. 9
Esenkent - Ümraniye
Istanbul, Turkey

FM Approvals Class: 1311

Approval Identification: 0003038952

Approval Granted: June 3, 2011

Said Approval is subject to satisfactory field performance, continuing follow-up Facilities and Procedures Audits, and strict conformity to the constructions as shown in the Approval Guide, an online resource of FM Approvals.

For more than 160 years FM Approvals has partnered with business and industry to reduce property losses.

Richard B. Dunne
Group Manager – Fire Protection
FM Approvals
1151 Boston-Providence Turnpike
Norwood, MA 02062



Member of the FM Global Group



Standart
POMPA ve MAKİNA SANAYİ TİC. AŞ.

www.standartpompa.com / e-mail: info@standartpompa.com.tr

Factory - Center
Fabrika - Merkez

Organize Sanayi Bölgesi
2. Cad. No: 9 34775 Esenkent
İstanbul - TÜRKİYE
Pbx: + 90 216 466 89 00
Fax: + 90 216 415 88 60



National Fire Protection Association

Be it known that NFPA recognizes

STANDART POMPA VE MAKINA SAN

as a Member in Good Standing and is entitled to
all the rights, honors and privileges of membership.

May 30, 2013

Date of Issue

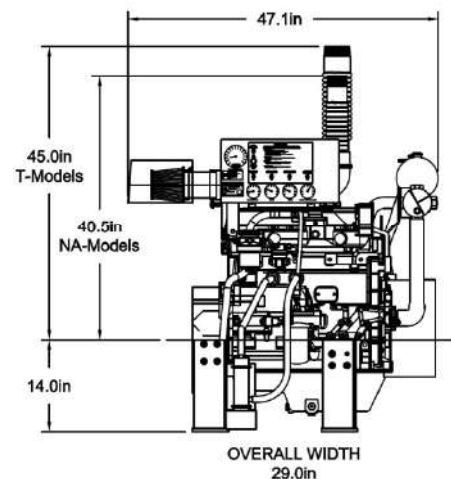
James M. Shannon, President

In witness thereof, the Seal of this Association
and the signature of its duly appointed officer is
affixed to this certificate.



FM-UL-cUL APPROVED RATINGS BHP/KW

JU4H MODEL	RATED SPEED								US-EPA (NSPS) Available Until
	1470	1760	2100	2350	2600	2800	3000		
UF10		41 31	51 38	55 41					12/31/10
UF12				55 41	59 44				12/31/10
UF14						70 52	71 53		12/31/13 +
UF20		60 45	67 50	72 54					12/31/10
UF22				72 54	75 56				12/31/10
UFAB26						80 60			12/31/13 +
UF24						80 60	83 62		12/31/13 +
UF30		64 48	79 59	85 63					12/31/10
UF32				85 63	85 63				12/31/10
UF34						104 78	115 86		12/31/12 +
UFH8	63 47	73 54							12/31/10
UFH0		73 54	88 66	98 73					12/31/10
UFH2				98 73	99 74				12/31/10
UF40		94 70	105 78	106 79					12/31/10 ▼ 12/31/09 ▲
UF42				106 79	106 79				12/31/09
UF58	79 59	110 82							12/31/09
UF50		110 82	130 97	127 95					12/31/09
UF52				127 95	127 95				12/31/09
UF54						145 108	145 108		12/31/12 +



- USA EPA (NSPS) Emissions Compliant. Applies to John Deere model year per Table 4 of 40 CFR Part 60 Sub Part III.
- ◆ All Models are available for Export
- + Not Available in California
- ▼ Less than 100HP
- ▲ Greater than 99HP

SPECIFICATIONS

ITEM	JU4H MODELS					
	UF10/12/14	UF20/22/AB26/24	UF30/32/34	UFH8/H0/H2	UF40/42	UF58/50/52/54
Number of Cylinders	4					
Aspiration	NA			T		
Rotation*	CW					
Weight – lb (kg)	910 (413)			935 (424)		
Compression Ratio	17.6:1			17.0:1		
Displacement – cu. in. (L)	275 (4.5)					
Engine Type	4 Stroke Cycle – Inline Construction					
Bore & Stroke – in. (mm)	4.19 x 5.00 (106 x 127)					
Installation Drawing	D534					
Wiring Diagram AC	C07591					
Wiring Diagram DC	C071590					
Engine Series	John Deere 4045 Series					
Speed Interpolation	OPT.					

Abbreviations: CW – Clockwise NA – Naturally Aspirated T – Turbocharged
*Rotation viewed from Heat Exchanger / Front of engine

CERTIFIED POWER RATING

- Each engine is factory tested to verify power and performance.
- Although FM-UL ratings are shown at specific speeds, Clarke engines with optional speed interpolation can be applied at any intermediate speed. To determine the intermediate speed power; make a linear interpolation from the Clarke FM-UL power curve. Contact Clarke or your Pump OEM Representative to obtain details.

ENGINE RATINGS BASELINES

- Engines are to be used for stationary emergency standby fire pump service only. Engines are to be tested in accordance with NFPA 25.
- Engines are rated at standard SAE conditions of 29.61 in. (752.1 mm) Hg barometer and 77°F (25°C) inlet air temperature [approximates 300 ft. (91.4 m) above sea level] by the testing laboratory (see SAE Standard J 1349).
- A deduction of 3 percent from engine horsepower rating at standard SAE conditions shall be made for diesel engines for each 1000 ft. (305 m) altitude above 300 ft. (91.4 m)
- A deduction of 1 percent from engine horsepower rating as corrected to standard SAE conditions shall be made for diesel engines for every 10°F (5.6°C) above 77°F (25°C) ambient temperature.

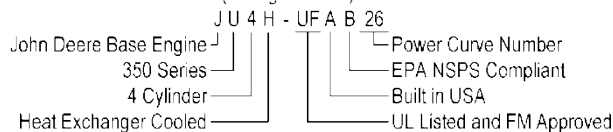


ENGINE EQUIPMENT

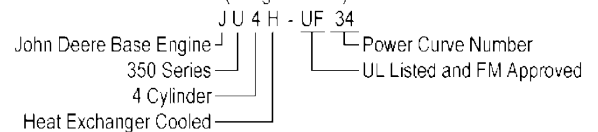
EQUIPMENT	STANDARD	OPTIONAL
Air Cleaner	Direct Mounted, Washable, Indoor Service with Drip Shield	Disposable, Drip Proof, Indoor Service Outdoor Type, Single or Two Stage
Alternator	12V-DC, 42 Amps with Poly-Vee Belt and Guard	24V-DC, 40 Amps with Poly-Vee Belt and Guard
Exhaust Protection	Blankets on UF10/12/14/20/22/AB26/24; Metal Guards on Manifolds and Turbocharger on UF30/32/34/H8/H0/H2/40/42/58/50/52/54	
Coupling	Bare Flywheel	Listed Driveshaft and Guard, UF10/12/14, UF20/22/AB26/24 – CDS10-SC; UF30/32/34, UFH8/H0/H2, UF40/42 – CDS20-SC; UF58/50/52/54 – CDS30-S1
Exhaust Flex Connection	For NA Engines - Stainless Steel Flex, NPT(M) Connection, 3" For T Engines – Stainless Steel Flex, NPT(M) Connection, 4"	For NA Engines – Stainless Steel Flex, NPT(M) Connection, 4" For T Engines - Stainless Steel Flex, 150# ANSI Flanged Connection, 5"
Flywheel Housing	SAE #3	
Flywheel Power Take Off	11.5" SAE Industrial Flywheel Connection	
Fuel Connections	Fire Resistant, Flexible, USA Coast Guard Approved, Supply and Return Lines	Stainless Steel, Braided, cUL Listed, Supply and Return Lines
Fuel Filter	Primary Filter with Priming Pump	
Fuel Injection System	Stanadyne Direct Injection	
Engine Heater	115V-AC, 1000 Watt	230V-AC, 1000 Watt
Governor, Speed	Constant Speed, Mechanical	
Heat Exchanger	Tube and Shell Type, 60 PSI (4 BAR), NPT(F) Connections – Sea/Salt Water Compatible	
Instrument Panel	English and Metric, Tachometer, Hourmeter, Water Temperature, Oil Pressure and Two (2) Voltmeters	
Junction Box	Integral with Instrument Panel; For DC Wiring Interconnection to Engine Controller	
Lube Oil Cooler	Engine Water Cooled, Plate Type	
Lube Oil Filter	Full Flow with By-Pass Valve	
Lube Oil Pump	Gear Driven, Gear Type	
Manual Start Control	On Instrument Panel with Control Position Warning Light	
Overspeed Control	Electronic with Reset and Test on Instrument Panel	
Raw Water Solenoid Operation	Automatic from Fire Pump Controller and from Engine Instrument Panel	
Run – Stop Control	On Instrument Panel with Control Position Warning Light	
Run Solenoid	12V-DC Energized to Run	12V-DC Energized to Stop; 24V-DC Energized to Run; 24V-DC Energized to Stop
Starters	Two (2) 12V-DC	Two (2) 24V-DC
Throttle Control	Adjustable Speed Control, Tamper Proof	
Water Pump	Centrifugal Type, Poly-Vee Belt Drive with Guard	

Abbreviations: DC – Direct Current, AC – Alternating Current, SAE – Society of Automotive Engineers, NPT(F) – National Pipe Tapered Thread (Female), NPT(M) – National Pipe Tapered Thread (Male), NA – Naturally Aspirated, T- Turbocharged, ANSI – American National Standards Institute

MODEL NOMENCLATURE (10 Digit Models)



MODEL NOMENCLATURE (8 Digit Models)



CLARKE Fire Protection Products, Inc.
3133 E. Kemper Rd., Cincinnati, Ohio 45241
United States of America
Tel +1-513-475-FIRE (3473) Fax +1-513-771-0726
www.clarkefire.com

CLARKE UK, Ltd.
Grange Works, Lomond Rd., Coatbridge, ML5-2NN
United Kingdom
Tel +44-1236-429946 Fax +44-1236-427274
www.clarkefire.com



Project: _____

Customer: _____

Engineer: _____

Pump Manufacturer: _____

Drawing Submittal Package

Model GPD Diesel Engine Driven Fire Pump Controller

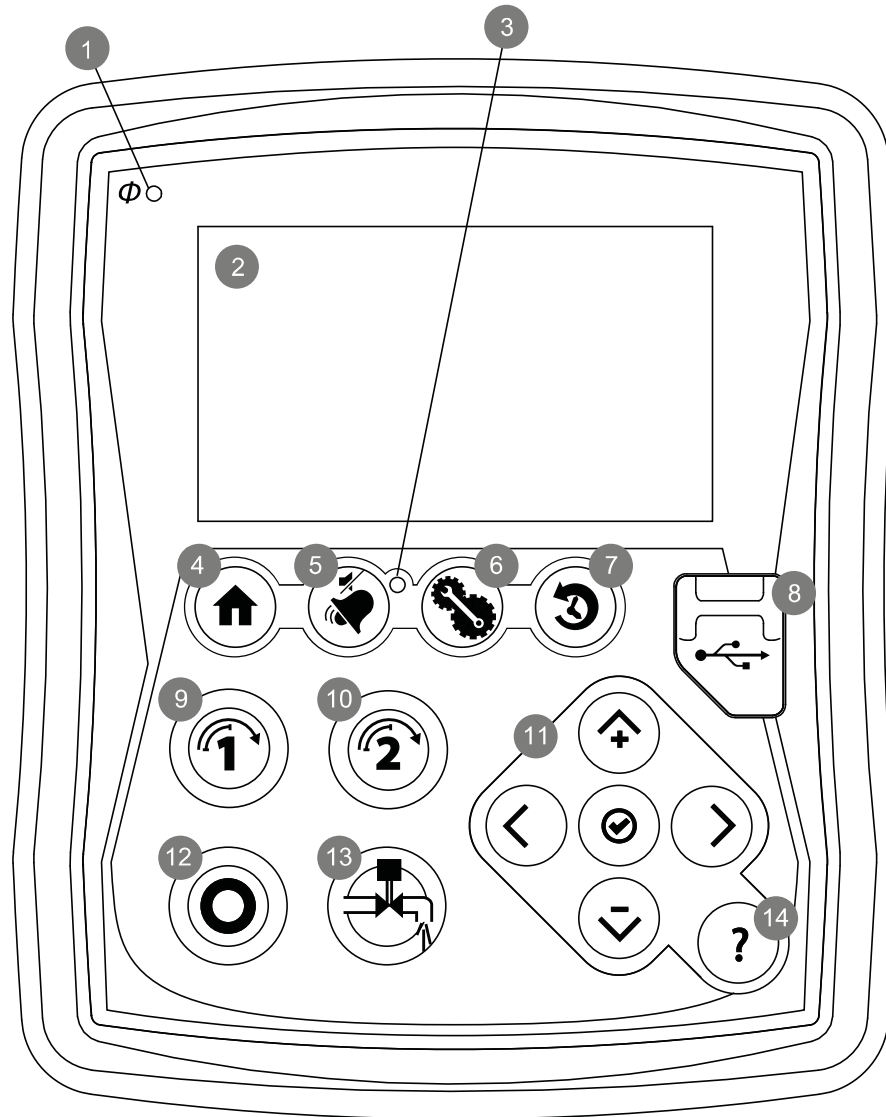


Contents:

- Submittal Data Sheets
- Dimensional Data
- Wiring Schematics
- Field Connections

NOTE: The drawings included in this package are for controllers covered under our standard offering. Actual AS BUILT drawings may differ from what is shown in this package

ViZiTouch Operator Interface



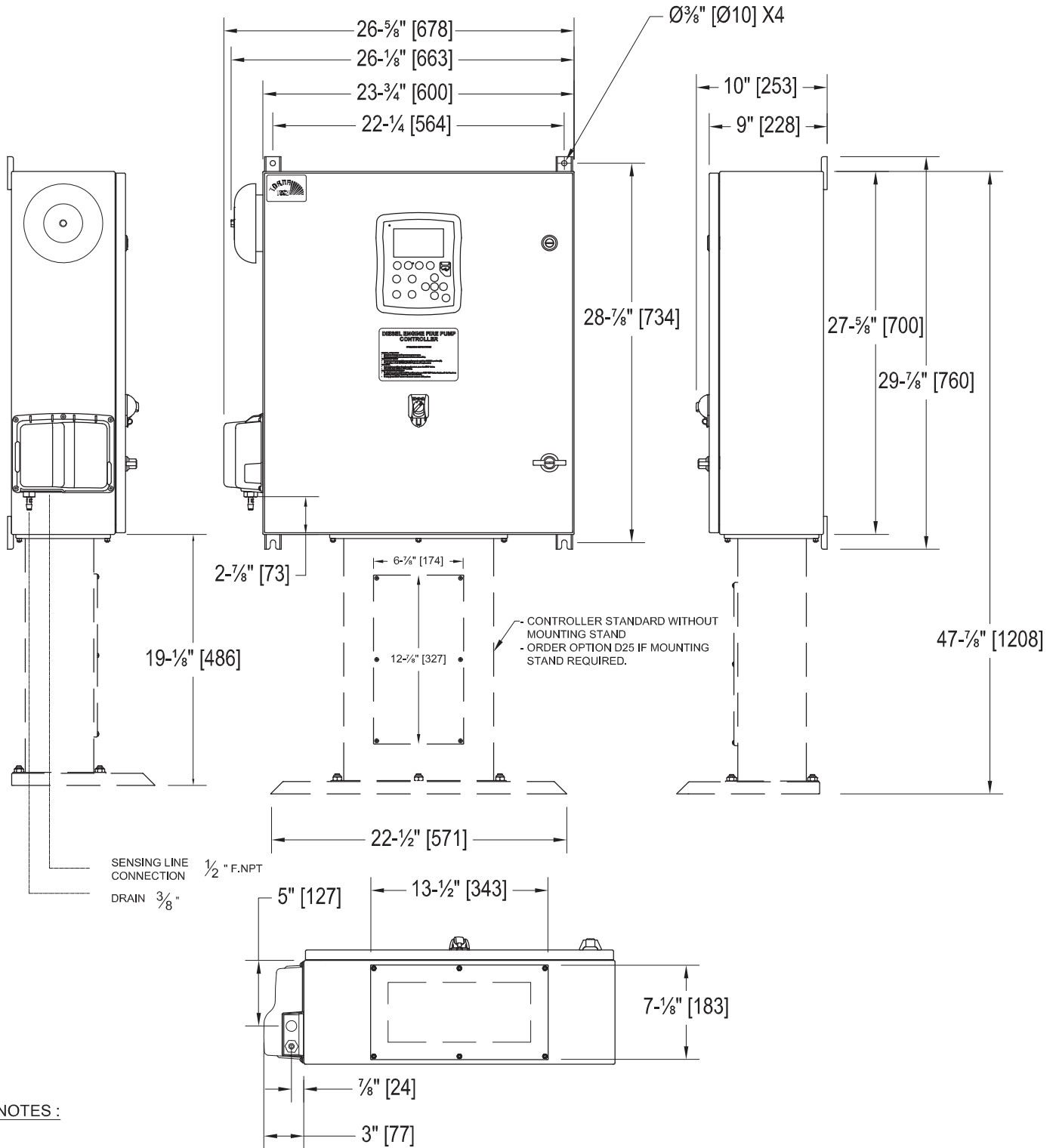
- | | |
|-------------------------------|--------------------------------|
| 1 - Power LED | 8 - USB port |
| 2 - Color touch screen | 9 - CRANK 1 button |
| 3 - Alarm LED | 10 - CRANK 2 button |
| 4 - HOME page button | 11 - Contextual navigation pad |
| 5 - ALARM page button | 12 - STOP button |
| 6 - CONFIGURATION page button | 13 - RUN TEST button |
| 7 - HISTORY page button | 14 - HELP button |

DIESEL ENGINE FIRE PUMP CONTROLLER

MODEL : GPD

Dimensions

BUILT TO THE LATEST EDITION OF THE NFPA 20 STANDARD

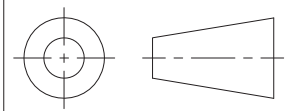


NOTES :

- NEMA 2 ASSEMBLY
- ALL DIMENSIONS ARE IN INCHES (MILLIMETERS)
- PAINT : TEXTURED RED RAL 3002.
- REMOVE GLAND PLATE TO DRILL CONDUIT ENTRANCE OPENING(S).
- ENTER CONDUIT THROUGH GLAND PLATE ONLY.
- USE WATERTIGHT CONDUIT CONNECTOR(S) ONLY.

Drawing for information only.
 Manufacturer reserves the right to modify this drawing without notice.
 Contact manufacturer for "As Built" drawing.

PROJECTION



REV.	DATE	DESCRIPTION	APP.
0.	11/10/19	FIRST ISSUE	

DRAWING No.

DES.

VER.

APP.

GPD-DI500 /E

DIESEL ENGINE FIRE PUMP CONTROLLER

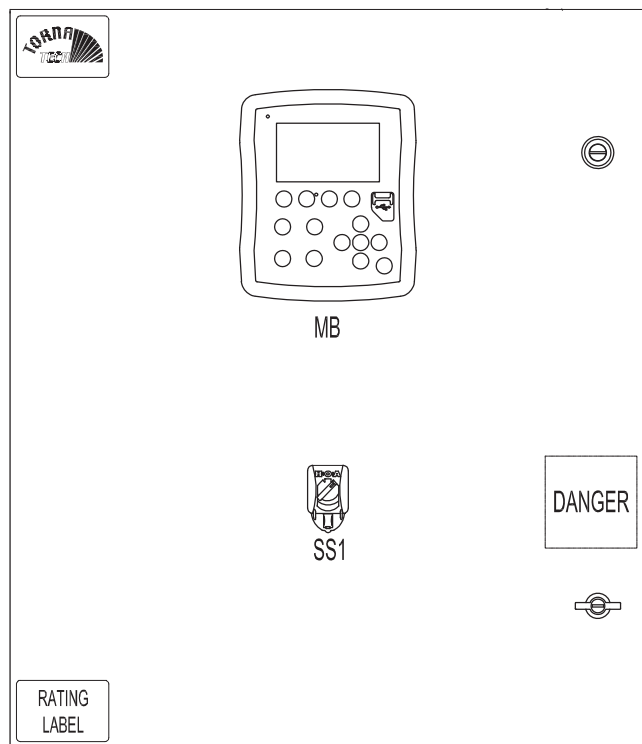
12Vdc or 24Vdc NEGATIVE GROUND

MODEL : GPD

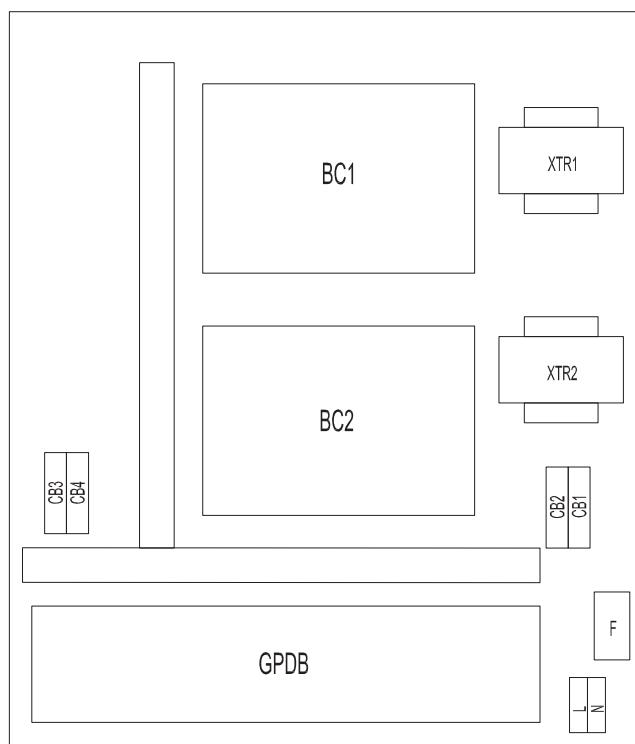
Layout

BUILT TO THE LATEST EDITION OF THE NFPA 20 STANDARD

DESIGNATION	DESCRIPTION
F	FILTER
CB1-2	MAGNETIC BREAKER 1 POLE 10 AMP.
XTR1- XTR2	TRANSFORMER
BC1-BC2	BATTERY CHARGER #1 AND #2
CB3-4	MAGNETIC BREAKER 1 POLE 10 AMP.
GPDB	I/O DIESEL BOARD
SS1	LOCKABLE 3 POSITIONS SELECTOR SWITCH
MB	VIZITOUCH MAIN BOARD
L & N	INCOMING POWER TERMINALS



FRONT DOOR LAYOUT



INTERNAL LAYOUT



REV.	DATE	DESCRIPTION	DES.	VER.	APP.
0.	11/10/24	FIRST ISSUE			

Drawing No.
GPD-LY500/E



Project: _____

Customer: _____

Engineer: _____

Pump Manufacturer: _____

Drawing Submittal Package

**Model GPY
Full Service Reduced Voltage
Wye-delta Open
Electric Fire Pump Controller**

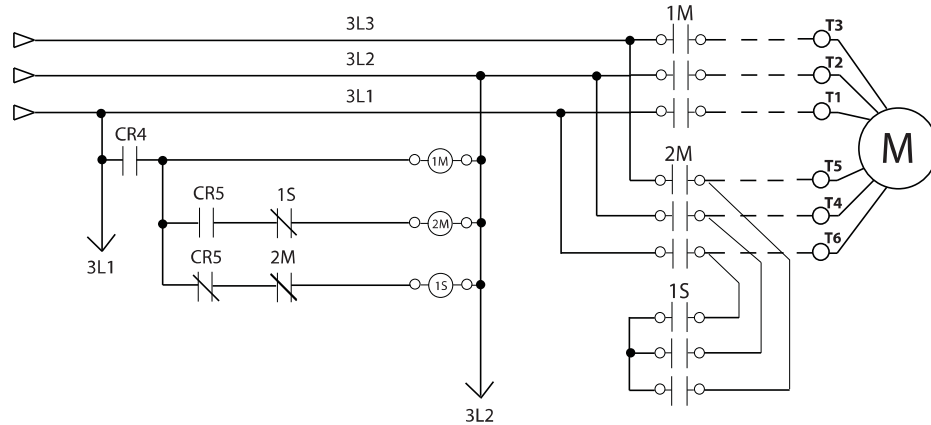


Contents:

- **Submittal Data Sheets**
- **Dimensional Data**
- **Wiring Schematics**
- **Field Connections**

NOTE: The drawings included in this package are for controllers covered under our standard offering. Actual AS BUILT drawings may differ from what is shown in this package

From normal incoming power through Disconnecting Means (IS/CB)*



Starting Method: Reduced Voltage
Wye-delta open

Typical Voltage Applied at Start: 100%

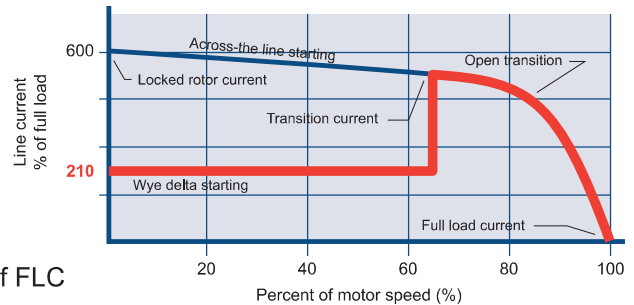
Inrush Current: 33% of normal load current

Starting Torque: 33%

Motor Type: Wye-delta

No. of Contactors: 2 at 58%, 1 at 33% of motor FLC

Min. ampacity of motor conductors: 6 at 125% x 58% of FLC



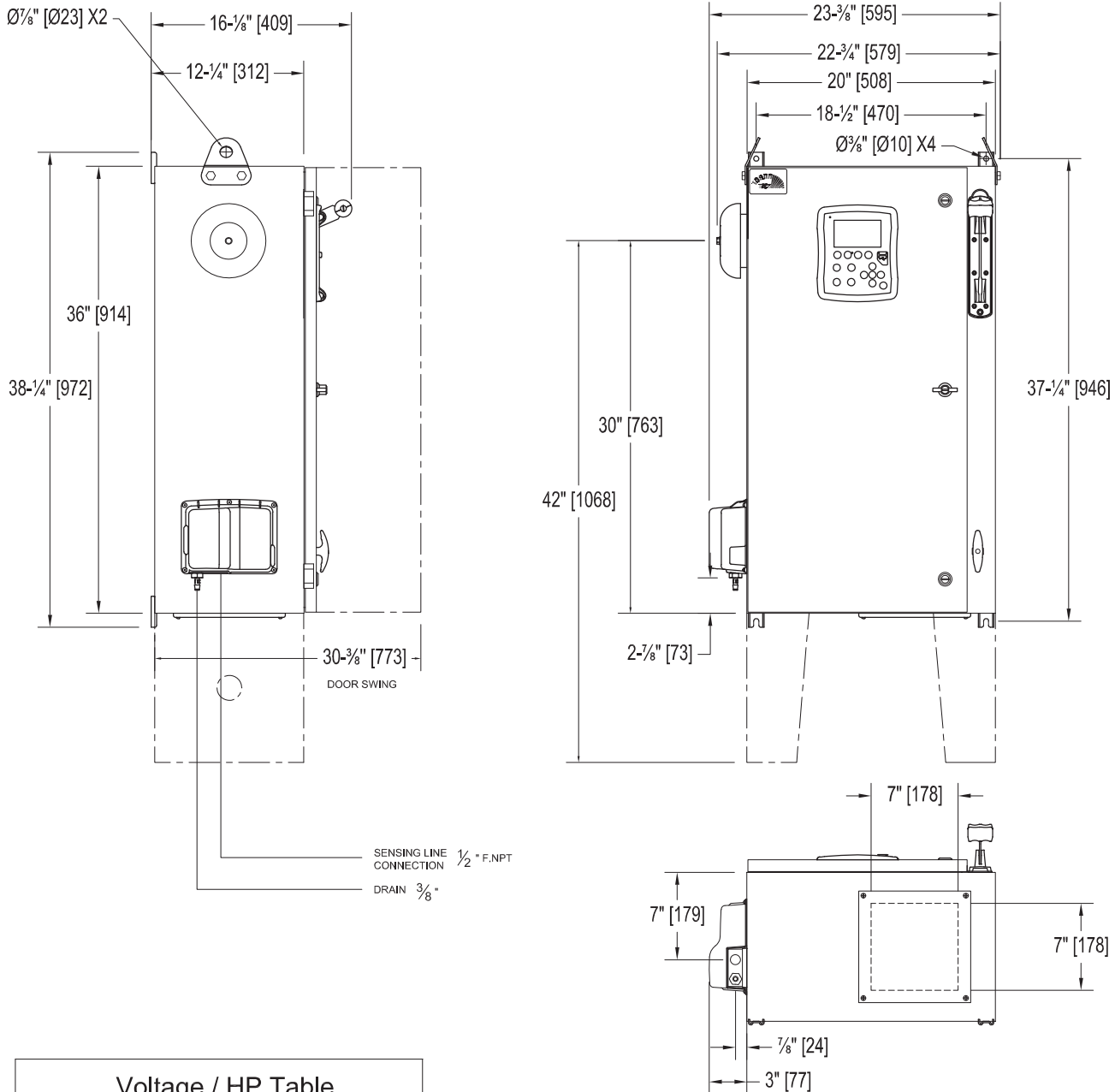
Shortcircuit Withstand Rating	208V to 480V - 3ph - 50/60Hz	600V - 3ph - 60Hz
<input type="checkbox"/> Standard	100,000 A	50,000 A
<input type="checkbox"/> Optional	150,000 A	100,000 A

Standard, Listings, Approvals and Certifications	Built to NFPA 20 (latest edition)	
	Underwriters Laboratory (UL)	<ul style="list-style-type: none"> • UL218 - Fire pump controllers • CSA C22.2 No. 14 Industrial Control Equipment
	FM Global	Class 1321/1323
	New York City	Accepted for use in the City of New York by the Department of Buildings
	Optional	
<input type="checkbox"/> CE Mark	Various EN, IEC & CEE directives and standards	
Enclosure	Protection Rating	
	<input type="checkbox"/> Standard: NEMA 2 (IP31) Optional <input type="checkbox"/> NEMA 12 <input type="checkbox"/> NEMA 4X-304 sst painted <input type="checkbox"/> IP54 <input type="checkbox"/> NEMA 3 <input type="checkbox"/> NEMA 4X-304 sst brushed finish <input type="checkbox"/> IP55 <input type="checkbox"/> NEMA 3R <input type="checkbox"/> NEMA 4X-316 sst painted <input type="checkbox"/> IP65 <input type="checkbox"/> NEMA 4 <input type="checkbox"/> NEMA 4X-316 sst brushed finish <input type="checkbox"/> IP66	
	Accessories <ul style="list-style-type: none"> • Bottom entry gland plate • Lifting Lugs • Keylock handle 	Paint Specifications <ul style="list-style-type: none"> • Red RAL3002 • Powder coating • Glossy textured finish

*Please see Disconnecting Means details on page 2.

Dimensions

BUILT TO THE LATEST EDITION OF THE NFPA20 STANDARD



Voltage / HP Table		
Voltage	Min HP	Max HP
208 - 240	5	30
380 - 400 - 415	5	50
440 - 480	5	60
600	5	75

NOTES :

- ALL DIMENSIONS ARE IN INCHES (MILLIMETERS).
- PAINT : TEXTURED RED RAL 3002.
- BOTTOM CONDUIT ENTRANCE THROUGH REMOVABLE GLAND PLATE RECOMMENDED
- USE WATERTIGHT CONDUIT CONNECTOR ONLY.
- PROTECT EQUIPMENT AGAINST DRILLING CHIPS.
- AMBIENT TEMPERATURE : BETWEEN 41°F (5°C) AND 104°F (40°C).

Drawing for information only.
 Manufacturer reserves the right to modify this drawing without notice.
 Contact manufacturer for "As Built" drawing.



GPXDIM

REV.	DATE	DESCRIPTION	APP.
5.	11/12/01	NEW VIZI TOUCH	DES.

DRAWING No.

GPX-DI111 /E



PROJECT: _____

CUSTOMER: _____

ENGINEER: _____

PUMP MANUFACTURER: _____

MODEL: JP

**ACROSS THE LINE START
JOCKEY PUMP CONTROLLER**

DRAWING SUBMITTAL PACKAGE

CONTENTS:

- BROCHURE
- DIMENSIONAL DATA
- WIRING SCHEMATICS
- FIELD CONNECTIONS

NOTE: The drawings included in this package are for controllers covered under our standard offering. Actual AS BUILT drawings may differ from what is shown in this package.





Jockey Pump Controller
Full voltage across the line starter
Micro Processor Based (Patent Pending)

N.Y.C.
APPROVED



OPCIONAL

JP

MODEL

MAIN FEATURES:

- Easy and quick start-up and operation
- NEMA 2 enclosure
- Micro-processor based logic
- System pressure indication
- Pressure transducer
- Fuseless motor protection
- Operational temperature limits 41°F to 122°F (5°C to 50°C)

The model JP jockey pump controllers are specifically designed to control jockey pumps in order to maintain the desired water pressure in fire pump serviced systems. A jockey pump installation prevents unnecessary starting of the fire pump due to small leaks.

Individual models are specific to the voltage available on site:

- JP1: 120 V / single phase / 60Hz
- JP2: 220–240 V / single phase / 50/60Hz
- JP3: 208 to 600 V / three phase / 50/60Hz

The standard power circuit consists of a horsepower rated disconnect switch, a thermo-magnetic motor protector and a motor contactor for across the line full voltage starting. Consult factory for other types of motor protection or starting methods available.

The automatic operation of the jockey pump is achieved with an electronic pressure monitoring module which utilizes a pressure transducer as a pressure sensing device. It allows the user to digitally set the start and stop pressure values and on or off delay timers (timers are optional) if required. The module continuously displays the system pressure and, when required, the start and stop pressure settings. The system pressure reading can be viewed without opening the door of the controller.



The module also allows the user to choose the units of measure of the pressure reading in psi, bar, kPA, feet of head and meter of head.

The model JP jockey pump controllers are built in accordance to the latest Underwriters Laboratories UL508A and C.S.A C22.2 No.14 standards.

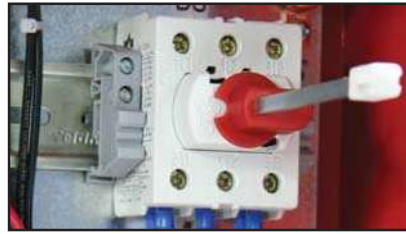


JP MODEL

Jockey Pump Controller Full voltage across the line starter Micro Processor Based (Patent Pending)



- Built-in wall mounting lugs for ease of installation



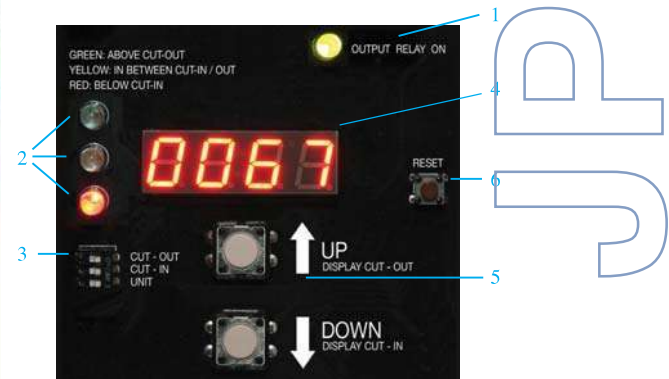
- Horsepower rated door interlocked rotary type disconnect switch



- Fuseless motor starter with thermo-magnetic motor protector and horsepower rated contactor



- 3 position Hand-Off Auto selector switch complete with pad-lockable cover



- System status diagnostic OUTPUT RELAY ON green LED
- System status diagnostic LED's for:
 - Green: system pressure at or above cut-out value
 - Yellow: system pressure between start cut-in and cut-out
 - Red: system pressure at or below cut-in value
- Easy to use dip-switches for field adjustable parameters
- High luminosity digital display
- Pushbuttons for setting and display of field adjustable parameters
- Reset pushbutton

- Pressure transducer with 0-300psi range and 316 stainless steel construction



HOW TO ORDER: JPx - V / HP / Ph / Hz
Ex.: JP3 - 208 / 2HP / 3Ph / 60

Tornatech Inc.
7075, Place Robert-Joncas,
Suite # 132,
Montreal, Canada
H4M 2Z2
Tel.: + 1 514 334 0523
+ 1 800 363 8448
Fax: + 1 514 334 5448

USA Sales Office
9578, Atchison Court,
Cincinnati, Ohio,
45069 U.S.A.
Tel.: + 1 513 307 6766
Fax: + 1 513 759 0509

Tornatech Pte Ltd.
Paya Ubi Industrial Park,
51 Ubi 1 Avenue,
Unit # 01-18,
Singapore 408933
Tel.: + 65 6844 3285
+ 65 6844 3917
Fax: + 65 6844 8549

Tornatech S.P.R.L.
Avenue Sabin 3,
1300 Wavre,
Belgique
Tel.: + 32 (0) 10 84 40 01
Fax: + 32 (0) 10 24 75 05

Tornatech Fz-Llc.
P.O. Box 502221,
Dubai, UAE
Tel.: + 971 50 8574639

tornatech.com

info@tornatech.com

JP-BRO-001/E Rev.8
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APPROVED

Certificate of Compliance

This certificate is issued for the following:

FIRE SERVICE WATER CONTROL VALVES

OUTSIDE SCREW & YOKE TYPE (OS&Y)

**SIZES: 2-1/2, 3, 4, 6, AND 8 INCH
(65, 80, 100, 150 AND 200 MM)**

Prepared for:

**Duyar Vana Makine San. ve Tic A.Ş.
Uğur Mumcu Mah. 2347 Sk. No:7
34265 Sultangazi, İstanbul, Turkey**

FM Approvals Class: 1120/1130

Approval Identification: 3038351

Approval Granted: June 3, 2010

Said Approval is subject to satisfactory field performance, continuing follow-up Facilities and Procedures Audits, and strict conformity to the constructions as shown in the Approval Guide, an online resource of FM Approvals.

*For more than 160 years FM Approvals has partnered with business and industry
to reduce property losses.*



Member of the FM Global Group

Roger L. Allard
Assistant Vice President – Principal Engineer
FM Approvals
1151 Boston-Providence Turnpike
Norwood, MA 02062

June 3, 2010

CERTIFICATE OF COMPLIANCE

Certificate Number 20120829-EX15799
Report Reference EX15799-20120829
Issue Date 2012-AUGUST-29


Issued to: DUYAR VANA MAKINA SAN VE TIC A S
2347 SK NO 7
ULLUR MUMCU MAH
34265 TURKEY

This is to certify that representative samples of GATE VALVES
T-1425

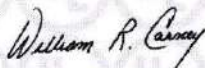
Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 262, Gate Valves for Fire-Protection Service
Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Listing Mark for the US and Canada should be considered as being covered by UL's Listing and Follow-Up Service meeting the appropriate requirements for US and Canada.

The UL Listing Mark for the US and Canada generally includes: the UL in a circle symbol with "C" and "US" identifiers:  the word "LISTED"; a control number (may be alphanumeric) assigned by UL; and the product category name (product identifier) as indicated in the appropriate UL Directory.

Look for the UL Listing Mark on the product.



William R. Carney, Director, North American Certification Programs
UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at www.ul.com/contactus





Certificate of Compliance

This certificate is issued for the following:

FIRE SERVICE WATER CONTROL VALVES

**MODEL T-1436 AND T-1437
NON-RISING STEM TYPE (NRS)
Sizes 2-1/2, 3, 4, 6 and 8 inch NPS
(65, 80, 100, 150 and 200 mm)
MODIFICATION**

Prepared for:

Duyar Vana Makina San ve Tic AS
Ugur Mumcu Mah 2347 Sk No 7
Sultangazi, Istanbul 34265
Turkey

Manufactured at:

Duyar Vana Makina San ve Tic AS
Ugur Mumcu Mah 2347 Sk No 7
Sultangazi, Istanbul 34265
Turkey

FM Approvals Class: 1120/1130

Approval Identification: 0003055531

Approval Granted: September 18, 2015

To verify the availability of the Approved product, please refer to www.approvalguide.com

Said Approval is subject to satisfactory field performance, continuing Surveillance Audits, and strict conformity to the constructions as shown in the Approval Guide, an online resource of FM Approvals.

A handwritten signature in black ink, appearing to read 'D.B. Fuller'.

David B. Fuller
AVP, Manager of Fire Protection
FM Approvals
1151 Boston-Providence Turnpike
Norwood, MA 02062 USA



Member of the FM Global Group



Certificate of Compliance

This certificate is issued for the following:

Alarm Check Valves

Model Y-4010

Sizes 2-1/2, 3, 4, 6 and 8 inch NPS

Prepared for:

Duyar Vana Makina San ve Tic AS
Ugur Mumcu Mah 2347 Sk No 7
Sultangazi, Istanbul 34265
Turkey

Manufactured at:

Duyar Vana Makina San ve Tic AS
Ugur Mumcu Mah 2347 Sk No 7
Sultangazi, Istanbul 34265
Turkey

FM Approvals Class: 1041

Approval Identification: 0003049431

Approval Granted: January 8, 2014

To verify the availability of the Approved product, please refer to www.approvalguide.com

Said Approval is subject to satisfactory field performance, continuing Surveillance Audits, and strict conformity to the constructions as shown in the Approval Guide, an online resource of FM Approvals.

A handwritten signature in dark ink, appearing to read 'Richard B. Dunne', written over a horizontal line.

Richard B. Dunne
Group Manager - Fire Protection
FM Approvals
1151 Boston-Providence Turnpike
Norwood, MA 02062



Member of the FM Global Group



2xSDS 200-500
570HP-1500d/dak
852m3/h-90m



6xSDS 250-450
800HP-1800d/dak
1350m³/h-100m



2xSDS 200-500
400kW-1500d/dak
1000m³/h-100m