

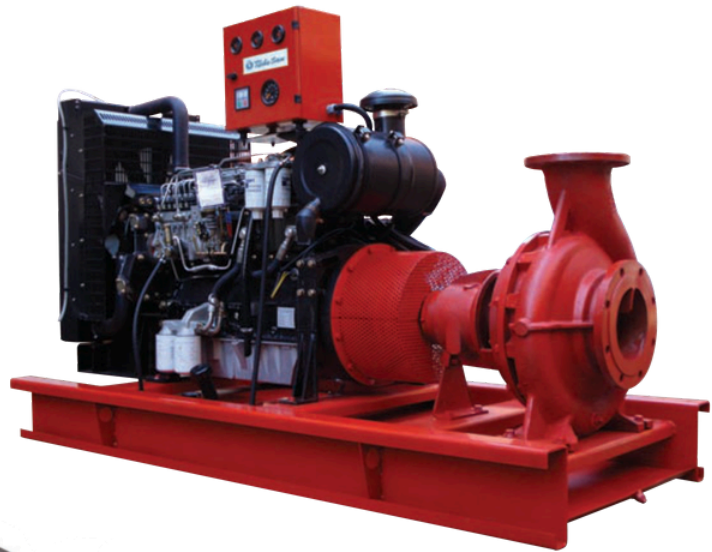


FIRE FIGHTING SETS



LISTED

FireGuard Brand supplied by Turbosan



We design and manufacture various types of pumps according to needs of industry. We also build fire fighting sets with the pumps in our product range complying with **NFPA 20** and **TS EN 12845**.

As main pump of the fire fighting sets different types of pumps are used. According to the required capacity and head values most suitable pumps are selected and delivered to the user as installed on base frame coupled with electric motors and / or diesel engines.

Fire fighting pumps complying with NFPA 20 and TS EN 12845

- Horizontal end suction pumps (NORM series)
- Horizontal split casing pumps (CEP series)
- Horizontal multi stage pumps (KAT series)
- Jockey pumps (Vertical)





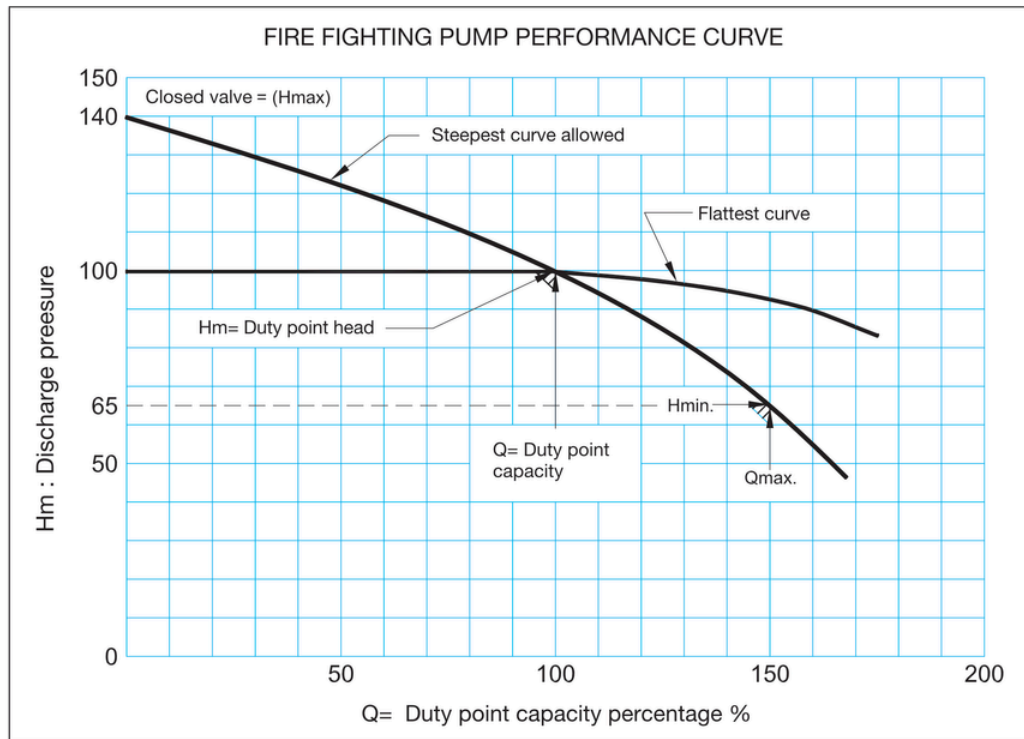
FIRE FIGHTING SETS



NFPA 20 (National Fire protection Association) is standard which defines fire pump groups and installations for fire protection. Pumps used in Turbosan fire fighting sets complies with NFPA 20.

Q/H curve for fire fighting pumps must be flat as much as possible. Thanks to this flatness when need for higher capacity increases pressure drop will be minimum and pressure required at sprinkler will be stable for larger flow rates.

On the performance curve Qmax value should not be less than 150 % of operating capacity. Closed valve pressure Hmax value should not be less than % 140 of operation point Hm value.



PUMPS GROUP

NORM, CEP and KAT series pumps and diesel engines and electric motors used for building fire fighting sets. They get combined in different installations according to the operation conditions.

- 1) Fire fighting sets with one pump or multiple pumps with electric motor
- 2) Fire fighting sets with one electric motor driven and one diesel engine driven pump.
- 3) Fire fighting sets with one electric motor driven and one diesel engine driven pump and one jockey Pump.

- The main goal of the use of multiple pumps is to have standby pump or in case of capacity increase it is not needed to change the fire fighting set. Pumps in fire fighting sets with 2 or 3 pumps must be fully complying with each other.

- The goal of Jockey pump use is to sustain pressure value in the piping installation in case of pressure leaks, without operating the main pumps. Vertical multi stage pump used as jockey pumps.

- Capacity (Q) of the jockey pumps must be 1 % of main pump's capacity and discharge head of the jockey pump must be 10 m more than that of main pump.

Example : If discharge capacity head of the main pump is 170 m³/h and discharge head of the main pump is 60 m, discharge capacity of the jockey pump must be 1,7 m³/h and discharge head of the jockey pump must be 60+10= 70 m.



FIRE FIGHTING SETS

FIRE FIGHTING PUMP CAPACITIES:

Capacity values of the fire fighting pumps shall be as below list according to NFPA 20 standard.

Discharge values are variable according to the fire fighting system so that they are not listed in the table.

- Water source or water tank specifications has the first priority in the fire fighting systems. Quantity of the water in the tank must be enough to supply water requirement completely and it should be suitable for easy re-filling. Suction line should be designed such that flow velocity is not more than 2,5 m/s. Suction pipe length must be 7 x De.
- Adequate ventilation must be available for diesel engine driven pumps and ambient temperature must be more than 10 °C.

DIAMETER TABLE FOR FIRE FIGHTING SYSTEM PIPING INSTALLATION

Capacity		Suction Pipe Diameter (*)	Discharge Pipe Diameter (*)	Safety Valve Diameter	Safety Valve Discharge Pipe Diameter	Flow Meter Diameter
m ³ /h	GPM					
5.7	25	1" - DN 25	1" - DN 25	3/4" - DN 15	1" - DN 15	1 1/4" - DN 32
11.4	50	1 1/2" - DN 40	1 1/4" - DN 32	1 1/4" - DN 32	1 1/2" - DN 40	2" - DN 50
22.7	100	2" - DN 50	2" - DN 50	1 1/2" - DN 40	2" - DN 50	2 1/2" - DN 65
34.1	150	2 1/2" - DN 65	2 1/2" - DN 65	2" - DN 50	2 1/2" - DN 65	3" - DN 80
45.4	200	3" - DN 80	3" - DN 80	2" - DN 50	2 1/2" - DN 65	3" - DN 80
56.8	250	3 1/2" - DN 100	3" - DN 80	2" - DN 50	2 1/2" - DN 65	4" - DN 100
68.1	300	4" - DN 100	4" - DN 100	2 1/2" - DN 65	3 1/2" - DN 100	4" - DN 100
91	400	4" - DN 100	4" - DN 100	3" - DN 80	5" - DN 125	4" - DN 100
102	450	5" - DN 125	5" - DN 125	3" - DN 80	5" - DN 125	4" - DN 100
114	500	5" - DN 125	5" - DN 125	3" - DN 80	5" - DN 125	5" - DN 125
170	750	6" - DN 150	6" - DN 150	4" - DN 100	6" - DN 150	5" - DN 125
227	1000	8" - DN 200	6" - DN 150	4" - DN 100	8" - DN 200	6" - DN 150
284	1250	8" - DN 200	8" - DN 200	6" - DN 150	8" - DN 200	6" - DN 150
341	1500	8" - DN 200	8" - DN 200	6" - DN 150	8" - DN 200	8" - DN 200
454	2000	10" - DN 250	10" - DN 250	6" - DN 150	10" - DN 250	8" - DN 200
568	2500	10" - DN 250	10" - DN 250	6" - DN 150	10" - DN 250	8" - DN 200
681	3000	12" - DN 300	12" - DN 300	8" - DN 200	12" - DN 300	8" - DN 200
795	3500	12" - DN 300	12" - DN 300	8" - DN 200	12" - DN 300	10" - DN 250
908	4000	14" - DN 350	12" - DN 300	8" - DN 200	14" - DN 350	10" - DN 250
1022	4500	16" - DN 400	14" - DN 350	8" - DN 200	14" - DN 350	10" - DN 250
1136	5000	16" - DN 400	14" - DN 350	8" - DN 200	14" - DN 350	10" - DN 250

* NFPA standard table 2-20

(*) Pump flange can be different than pipe diameter.

Minimum suction pipe length must be 10 x suction pipe diameter.

100 GPM = 22,71 m³/h = 6,3 lt/s.



MAIN PUMP MATERIALS:

- Casing : Cast iron or nodular cast iron
- Impeller : Bronze
- Wear ring : Bronze
- Shaft : AISI 420 stainless steel
- Shaft sleeve : AISI 420 stainless steel
- Shaft seal'ng : Soft packing or mechanical seal.
- Painting : RAL 3020

OPERATING PRINCIPLE OF FIRE FIGHTING SET:

- Each pump of the fire fighting set operates by manually pressing of button on control panel or they operate automatically.
- Pumps shut down by pressing on stop button on control panel manually.
- Automatic systems operates by means of pressure switch. When pressure goes down lower than a specific value jockey pump starts operating. If the jockey pump can not supply enough pressure to support pressure leak main pumps starts to supply pressure to the fire fighting installation. If pressure supply of the jockey pump is enough it stops and main pumps do not start.

System can be set to start for certain intervals in a week, to start and stop



FIRE FIGHTING SETS UL LISTED FIRE FIGHTING PUMPS

UL LISTING : DEFINITION AND BENEFITS

- UL (Underwriters Laboratories Inc.) Is a worldwide independent safety consulting company established in 1894.
- UL engineers control, test and certify various equipment used in fire fighting systems. UL listing is a verification of fire fighting equipment.
- Turbosan’s fire fighting pumps are UL listed. Turbosan’s UL listed and related test reports are available at UL web site.
- Pumps have been tested according to UL 448, engineering files have been checked, mechanical and performance tests conducted by UL engineers.
- Materials of UL listed pumps are in accordance with UL 448 specifications.
- UL listed pumps are checked and tested regularly by UL engineers.
- Performance characteristics of UL listed pumps are selected to suit performance demand of fire fighting applications.
- Use of UL listing fire fighting equipment results in lower insurance fees.
- Periodical controls (daily, weekly, monthly, annual) of the fire fighting pumps done regularly.
- fire fighting pump UL listing numbers;

NORM pumps : EX 26604

CEP pumps : EX 26605

HD-NORM 50/250, HD-NORM 65/250, HD-NORM 85/250 MATERIAL LIST				
PARTS NO:	COMPONENT DESCRIPTION	MATERIAL	ALTERNATIVE MATERIAL-1	ALTERNATIVE MATERIAL-2
102	VOLUTE	GGG40	AISI316	DUPLEX
161	STUFFING BOX	GGG40	AISI316	DUPLEX
183	SUPPORT FOOT	SHEET METAL	SHEET METAL	SHEET METAL
210	SHAFT	AISI316	AISI316	DUPLEX
230	IMPELLER	G-CuSn10	AISI316	DUPLEX
330	BEARING FRAME	GG25	GG25	GG25
360	BEARING COVER	GG25	GG25	GG25
452	GLAND	G-CuSn10	G-CuSn10	DUPLEX
458	LANTERN RING	G-CuSn10	G-CuSn10	DUPLEX
502	WEAR RING	G-CuSn10	G-CuSn10	DUPLEX
507	WATER THROWER	RUBBER	RUBBER	RUBBER
524.1	SHAFT SLEEVE	AISI316	AISI316	AISI316
591	GUARD PLATE	STEEL	STEEL	STEEL
922	IMPELLER NUT	AISI316	AISI316	AISI316
970	PUMP LABEL	AISI304	AISI304	AISI304

CEP 100/250, CEP-EFF 125/300B MATERIAL LIST				
PARTS NO:	COMPONENT DESCRIPTION	MATERIAL	ALTERNATIVE MATERIAL-1	ALTERNATIVE MATERIAL-2
102.1	CASING	GGG40	AISI316	DUPLEX
102.2	COVER	GGG40	AISI316	DUPLEX
210	SHAFT	AISI316	AISI316	DUPLEX
225.1	BEARING RING_INTERNAL	GG25	GG25	GG25
225.2	BEARING RING_EXTERNAL	GG25	GG25	GG25
234	IMPELLER	G-CuSn10	AISI316	DUPLEX
340.1	BEARING HOUSING	GGG40	GGG40	GGG40
360.1	BEARING COVER-MOTOR SIDE	GG25	GG25	GG25
360.2	BEARING COVER-CLOSED SIDE	GG25	GG25	GG25
360.3	BEARING COVER-INSIDE	GG25	GG25	GG25
452	GLAND	G-CuSn10	G-CuSn10	DUPLEX
458	LANTERN RING	G-CuSn10	G-CuSn10	DUPLEX
502	WEAR RING	G-CuSn10	G-CuSn10	DUPLEX
507	WATER THROWER	RUBBER	RUBBER	RUBBER
526	SHAFT SLEEVE	AISI316	AISI316	AISI316
542	STUFFING BOX BUSHING	GGG40	AISI316	DUPLEX
560	CENTERING TAPER PIN	AISI304	AISI304	AISI304
591	GUARD PLATE	STEEL	STEEL	STEEL
970	PUMP LABEL	AISI304	AISI304	AISI304

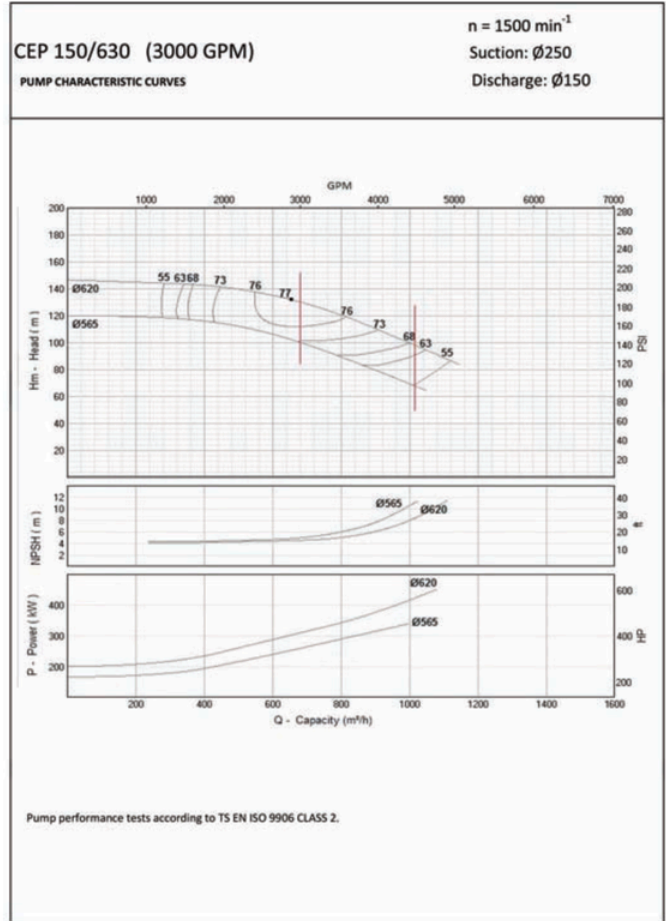
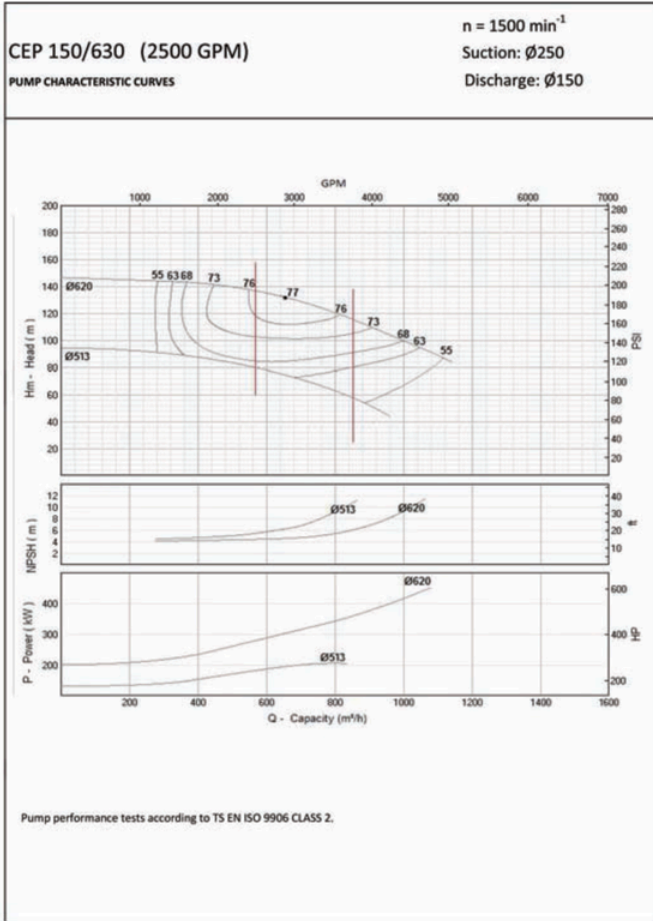
Explanation:

Material : It is the standart material.

Alternative Material-1 and Alternative Material-2: It is the optional material list.

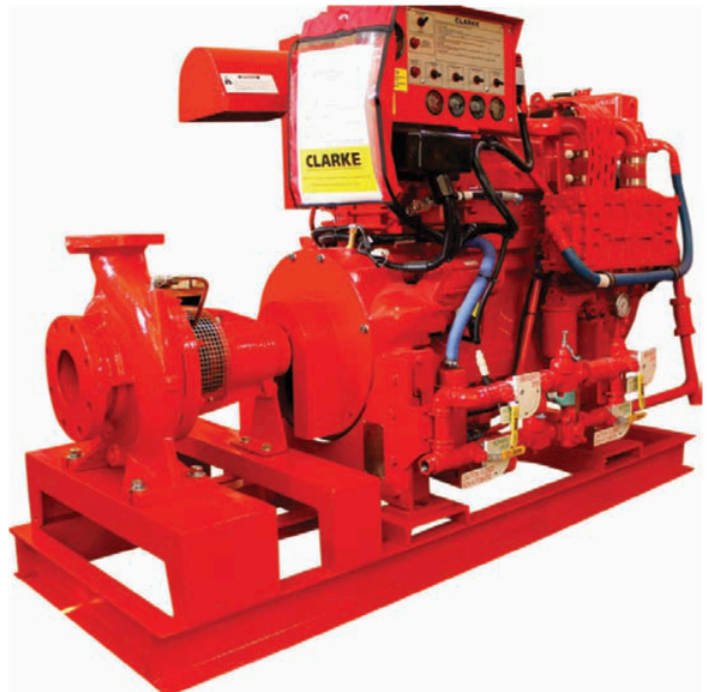


FIRE FIGHTING SETS



NEW NORM SERIES FIRE FIGHTING PUMPS TO BE UL LISTED						
Item No	NORM SERIES PUMP MODEL	Capacity (Q)		Head (Hm)		Speed
		m³/h	GPM	m.w.c.	PSI	
6	SN-NORM 32/250	22.7	100	75 - 98	106 - 140	3000
		34.1	150	65 - 90	92 - 128	3000
7	NORM 80/315	114	500	105 - 155	150 - 220	3000
8	NORM 100/315	170	750	80 - 145	114 - 207	3000
		227	1000	75 - 140	108 - 200	3000
9	SN-NORM 100/250	227	1000	57 - 100	82 - 142	3000
		284	1250	55 - 95	78 - 136	3000
10	HD-NORM 125/315	284	1250	80 - 150	114 - 216	3000
		341	1500	70 - 150	100 - 212	3000
11	NORM 150/315	454	2000	80 - 128	114 - 183	3000

NEW CEP SERIES FIRE FIGHTING PUMPS TO BE UL LISTED						
Item No	CEP SERIES PUMP MODEL	Capacity (Q)		Head (Hm)		Speed
		m³/h	GPM	m.w.c.	PSI	
12	CEP 150/630	454	2000	80 - 140	114 - 200	1500
		568	2500	80 - 135	114 - 193	1500
		681	3000	100 - 130	142 - 185	1500





FIRE FIGHTING SETS

UL LISTED FIRE PUMPS FOR 3000 rpm

NORM SERIES Centrifugal Stationary Pumps for Fire-Protection Service, End Suction (QWZU) UL no: EX26604 UL 448

Item No	END SUCTION PUMP MODEL	Capacity (Q)		Head (Hm)		Shut off Head (Hm)	Power (%100 Capacity)	Power (%150 Capacity)	Diesel Engine Model	Diesel Engine Rated Power		Electric Motor Rated Power
		m ³ /h	GPM	m.w.c.	PSI					m.w.c.	kW	
1	HD-NORM 50/250	45.4	200	69.6	99	72	20	23.5	JU4H-UF14, JU4R-UF13(Rad)	53	71	30
				80	114	82	20.8	25	JU4H-UF14, JU4R-UF13(Rad)	53	71	30
				90	128	92	22.1	27	JU4H-UF14, JU4R-UF13(Rad)	53	71	30
				94	134	96	22.8	28	JU4H-UF14, JU4R-UF13(Rad)	53	71	30
				97	138	98	23.9	28.2	JU4H-UF14, JU4R-UF13(Rad)	53	71	30
		56.8	250	66.8	95	71	20.66	26.39	JU4H-UF14, JU4R-UF13(Rad)	53	71	30
				80	114	83.3	23	29	JU4H-UF14, JU4R-UF13(Rad)	53	71	30
				90	128	93	25.5	32	JU4H-UF14, JU4R-UF13(Rad)	53	71	37
				93	132	96.3	26.3	33	JU4H-UF14, JU4R-UF13(Rad)	53	71	37
				94.9	135	98	26.85	33.06	JU4H-UF14, JU4R-UF13(Rad)	53	71	37
2	HD-NORM 65/250	68.1	300	64.7	92	68.6	26.08	30.84	JU4H-UF14, JU4R-UF13(Rad)	53	71	30
				70	100	73.2	28	33	JU4H-UF14, JU4R-UF13(Rad)	53	71	37
				80	114	82	31.9	38.2	JU4H-UF14, JU4R-UF13(Rad)	53	71	45
				90	128	84.2	36.1	44	JU4H-UF14, JU4R-UF13(Rad)	53	71	45
				93	132	93.2	37.5	45	JU4H-UF14, JU4R-UF13(Rad)	53	71	45
				97.8	139	98	39.95	48.92	JU4H-UF14, JU4R-UF13(Rad)	53	71	55
		91	400	63.3	90	69.7	29.74	34.32	JU4H-UF14, JU4R-UF13(Rad)	53	71	37
				70	100	76	32.7	38.3	JU4H-UF14, JU4R-UF13(Rad)	53	71	45
				80	114	84	37.3	44.6	JU4H-UF14, JU4R-UF13(Rad)	53	71	45
				90	128	92.4	42.2	50.8	JU4H-UF14, JU4R-UF13(Rad)	53	71	55
				93	132	94.8	43.7	52.2	JU4H-UF14, JU4R-UF13(Rad)	53	71	55
				97	138	98	45.81	55.45	JU4H-UF14, JU4R-UF13(Rad)	53	71	55
		102	450	61.2	87	69.3	30.9	35.31	JU4H-UF14, JU4R-UF13(Rad)	53	71	37
				70	100	76.8	35	40.4	JU4H-UF14, JU4R-UF13(Rad)	53	71	45
				80	114	84.4	40	46.7	JU4H-UF14, JU4R-UF13(Rad)	53	71	55
				90	128	92.8	45.3	53	JU4H-UF14, JU4R-UF13(Rad)	53	71	55
				94.9	135	97	48.02	57.94	JU4H-UF24, JU4R-UF23(Rad)	62	83	75
3	HD-NORM 80/250	102	450	71	101	74.5	36.42	41.35	JU4H-UF14, JU4R-UF13(Rad)	53	71	45
				80	114	82	35.7	43.4	JU4H-UF14, JU4R-UF13(Rad)	53	71	45
				90	128	91.3	40.3	50.4	JU4H-UF14, JU4R-UF13(Rad)	53	71	55
				100	142	100.3	45.4	57.9	JU4H-UF24, JU4R-UF23(Rad)	62	83	75
				102.7	146	103.1	54.36	62.35	JU4H-UF24, JU4R-UF23(Rad)	62	83	75
		114	500	69.6	99	74.5	37.78	43.56	JU4H-UF14, JU4R-UF13(Rad)	53	71	45
				80	114	83	38.9	46.6	JU4H-UF14, JU4R-UF13(Rad)	53	71	55
				90	128	91.7	43.8	53	JU4H-UF14, JU4R-UF13(Rad)	53	71	55
				100	142	100.3	49.3	60.7	JU4H-UF24, JU4R-UF23(Rad)	62	83	75
				102.7	146	102.8	56.9	67.66	JU4H-UF24, JU4R-UF23(Rad)	62	83	75



FIRE FIGHTING SETS

UL LISTED FIRE PUMPS FOR 3000 rpm

CEP SERIES Centrifugal Stationary Pumps for Fire-Protection Service, Split Case

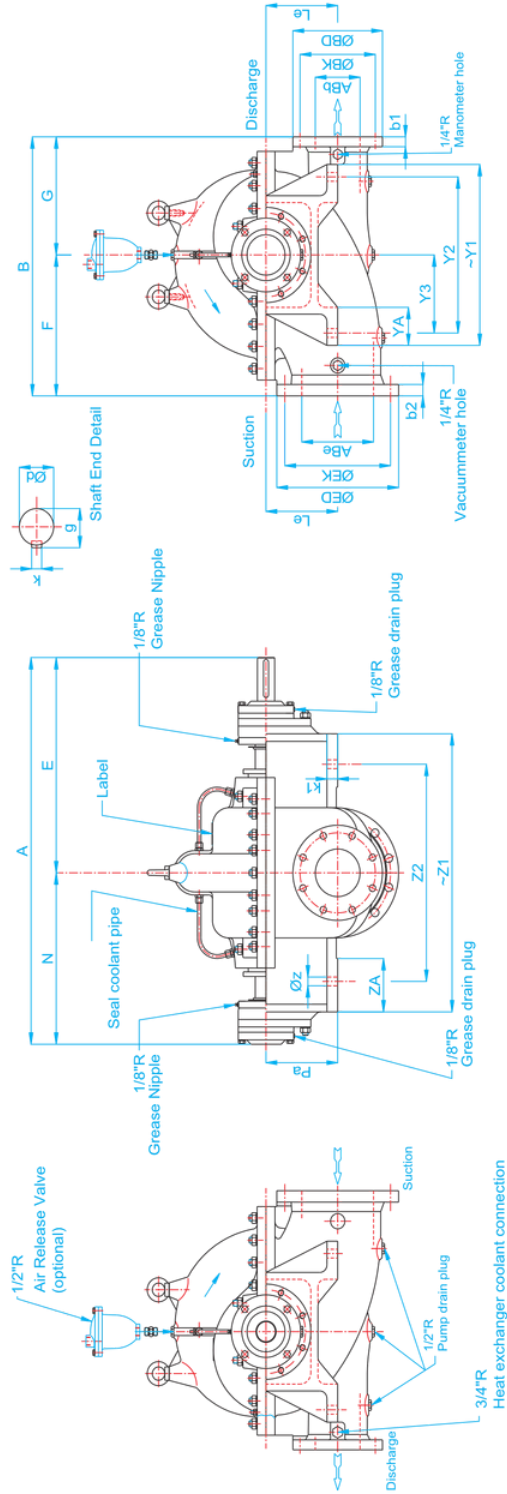
(QXJY) UL no: EX26605 UL 448

Item No	SPLIT CASE PUMP MODEL	Capacity (Q)		Head (Hm)		Shut off Head (Hm)	Power (%100 Capacity)	Power (%150 Capacity)	Diesel Engine Model	Diesel Engine Rated Power		Electric Motor Rated Power		
		m³/h	GPM	m.w.c.	PSI					m	kW		kW	HP
4	CEP 100/250	114	500	78.8	112	79.7	51.32	56.08	JU4H-UF34, JU4R-UF53(Rad)	86	115	75		
				90	128	90	57.8	65.06	JU4H-UF34, JU4R-UF53(Rad)	86	115	75		
				100	142	100.4	64.4	73.06	JU4H-UF34, JU4R-UF53(Rad)	86	115	75		
				110	156	110	72	82.01	JU4H-UF54	108	145	90		
				117.4	167	118.33	78.63	87.03	JU4H-UF54	108	145	90		
		170	750	74.5	106	79.67	55.97	64.31	JU4H-UF34, JU4R-UF53(Rad)	86	115	75		
				80	114	83.3	59.74	69.34	JU4H-UF34, JU4R-UF53(Rad)	86	115	75		
				90	128	92.4	66.95	78	JU4H-UF54	108	145	90		
				100	142	101.2	74.51	88.8	JU4H-UF54	108	145	90		
				110	156	111.2	82.58	100.2	JU4H-UF54	108	145	110		
		227	1000	117.4	167	118.33	88.76	105.56	JU4H-UF54	108	145	110		
				68.9	98	81.33	63.24	73.81	JU4H-UF34, JU4R-UF53(Rad)	86	115	75		
				80	114	90	71.63	85	JU4H-UF54	108	145	90		
				90	128	98	79.42	96	JU4H-UF54	108	145	110		
				100	142	106	88.25	108	JU4H-UF54	108	145	110		
		5	CEP- EFF 125/300B	227	1000	110	156	114	97.8	121	JU6H-UF34	131	175	132
						113.9	162	118.33	101.39	121.19	JU6H-UF34	131	175	132
						77.4	110	81.2	89.79	95.32	JU4H-UF54	108	145	90
80	114					83.11	95.52	99	JU4H-UF54	108	145	110		
90	128					92.44	104.56	110.4	JU4H-UF54	108	145	110		
100	142					103.56	118	124.9	JU6H-UF34	131	175	132		
110	156					112.89	132.8	141.44	JU6H-UF54	161	216	160		
120	170			123.1	149.7	161.76	JU6H-UF54	161	216	160				
284	1250			133.6	190	135.2	178.49	191.3	JU6H-UF84	205	275	200		
				75.2	107	81.6	94.04	99	JU4H-UF54	108	145	90		
				80	114	86.2	99.88	107.8	JU4H-UF54	108	145	110		
				90	128	95.6	113.83	123.81	JU6H-UF34	131	175	132		
				100	142	104.9	129.63	137.96	JU6H-UF54	161	216	160		
				110	156	114.6	145.95	154.67	JU6H-UF54	161	216	160		
				120	170	124.4	164.42	173.14	JU6H-UF84	205	275	200		
341	1500			132.9	189	136.8	191.05	195.95	JU6H-UF84	205	275	200		
				71	101	80.8	96.34	105.36	JU4H-UF54	108	145	110		
				80	114	89.8	106.78	122.06	JU6H-UF34	131	175	132		
		90	128	98.7	119.28	136.09	JU6H-UF54	161	216	160				
		100	142	108.9	133.34	156.38	JU6H-UF54	161	216	160				
		110	156	117.8	151.25	174.86	JU6H-UF84	205	275	200				
		120	170	128	173	195.9	JU6H-UF84	205	275	200				
130.1	185	136.8	196.96	212.74	JU6H-UF84	205	275	250						



FIRE FIGHTING SETS

UL LISTED CEP PUMPS DIMENSION TABLE



PUMP MODEL	Discharge Flange											Suction Flange				Shaft End															
	ABb	ABe	N	E	A	F	G	B	Pa	Le	Z1	Z2	ZA	Y1	Y2	Y3	YA	K1	Øz	ØBD	ØBK	ØEK	ØED	b1	Hole Piece x Ø	ØEK	b2	Hole Piece x Ø	b2	Ød	k
CEP 100/250	100	150	370	485	855	330	218	548	285	190	325	285	-	325	225	150	95	16	23	279.4	234.95	234.95	298.45	26	8xØ22	26	8xØ22	30	42	12	45
CEP-EFF 125/300	125	200	450	565	1015	370	310	680	200	200	730	570	140	475	410	205	100	30	23	279.4	234.95	234.95	298.45	26	8xØ22	26	8xØ22	30	48	14	51.5
* CEP 150/630	150	250	555	705	1260	600	450	1050	245	300	865	710	170	500	420	210	110	35	28	317.5	269.87	269.87	361.95	26	12xØ22	26	12xØ26	30	62	18	66

NOTE: Suction flange of Cep 100/250, Cep-EFF 125/300 pumps are according to ANSI/ASME 16.1 Class 125 discharge flange are according to ANSI/ASME 16.1 Class 25C

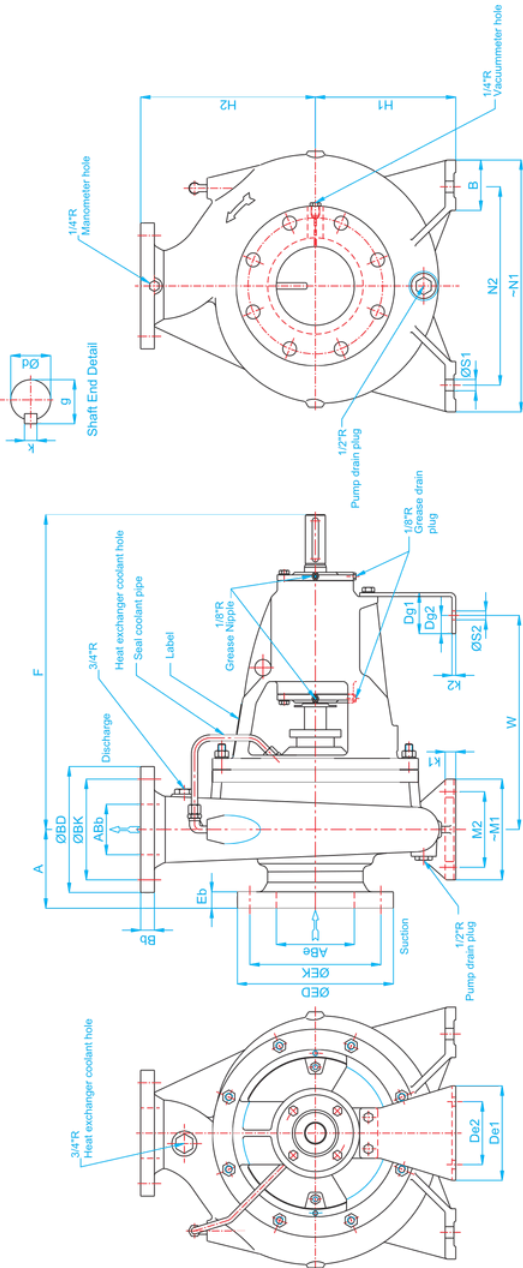
Suction flange of Cep 150/630 pump is according to ANSI/ASME 16.1 Class 150, discharge flange is according to ANSI/ASME 16.1 Class 300.

(*) UL listing are progress.



FIRE FIGHTING SETS

UL LISTED NORM PUMPS DIMENSIONS TABLE



PUMP MODEL	Discharge Flange										Suction Flange				Shaft End													
	ABb	ABe	A	F	H1	H2	M1	M2	N1	N2	ØS1	De1	De2	Dg1	Dg2	k2	ØS2	ØBK	ØBk	Hole Piece x Ø	ØED	Bb	ØEK	Hole Piece x Ø	Eb	Ød	k	g
HD-NORM 50/250	80	50	125	360	180	225	125	95	320	250	18	110	80	50	24	6	14	152.4	120	4xØ20	16	190.5	152.4	4xØ20	20	24	8	27
HD-NORM 65/250	65	100	125	470	200	250	160	120	360	280	18	150	100	65	35	6	14	177.8	139.7	4xØ20	20	228.6	190.5	8xØ20	22	32	10	35
HD-NORM 80/250	80	125	125	500	225	280	160	120	400	315	17	150	100	65	35	6	14	190.5	152.4	4xØ20	22	254	215.9	8xØ20	24	32	10	35
SN-NORM 32/250	32	50	100	470	180	225	125	95	320	250	18	130	100	65	29	6	14	120	89	4xØ16	16	150	120	4xØ20	16	32	10	35
NORM 80/315	80	100	125	525	250	315	160	120	400	315	19	150	100	65	29	6	14	210	168.5	8xØ22	22	228.6	190.5	8xØ20	22	42	12	45
SN-NORM 100/250	100	125	140	530	225	280	160	120	400	315	20	150	100	65	29	6	14	228.6	190.5	8xØ200	24	254	215.9	8xØ20	24	42	12	45
NORM 100/315	100	125	140	530	250	315	160	120	400	315	18	150	100	65	29	6	14	255	200	8xØ22	32	254	215.9	8xØ20	24	42	12	45
HD-NORM 125/315	125	150	140	579	280	355	200	150	500	400	24	150	100	65	29	6	14	280	235	8xØ22	35	279.4	241.3	8xØ22	24	52	16	56
NORM 150/315	150	200	160	579	280	400	200	150	550	450	24	150	100	65	29	6	14	320	270	12xØ22	37	342.9	298.45	8xØ22	26	52	16	56

NOTE: Suction and Discharge flanges of HD-NORM 50/250, HD-NORM 65/250, HD-NORM 80/250 pumps are according to ANSI/ASME 16.1 Class 125.
 Suction and Discharge flanges of SN-NORM 32/250, SN-NORM 100/250 pumps are according to ANSI/ASME 16.1 Class 150.
 Suction flanges of NORM 80/315, NORM 100/315, HD-NORM 125/315 pumps are according to ANSI/ASME 16.1 Class 150 and Discharge flanges are according to ANSI/ASME 16.1 Class 300.
 (*) UL listing are in progress