

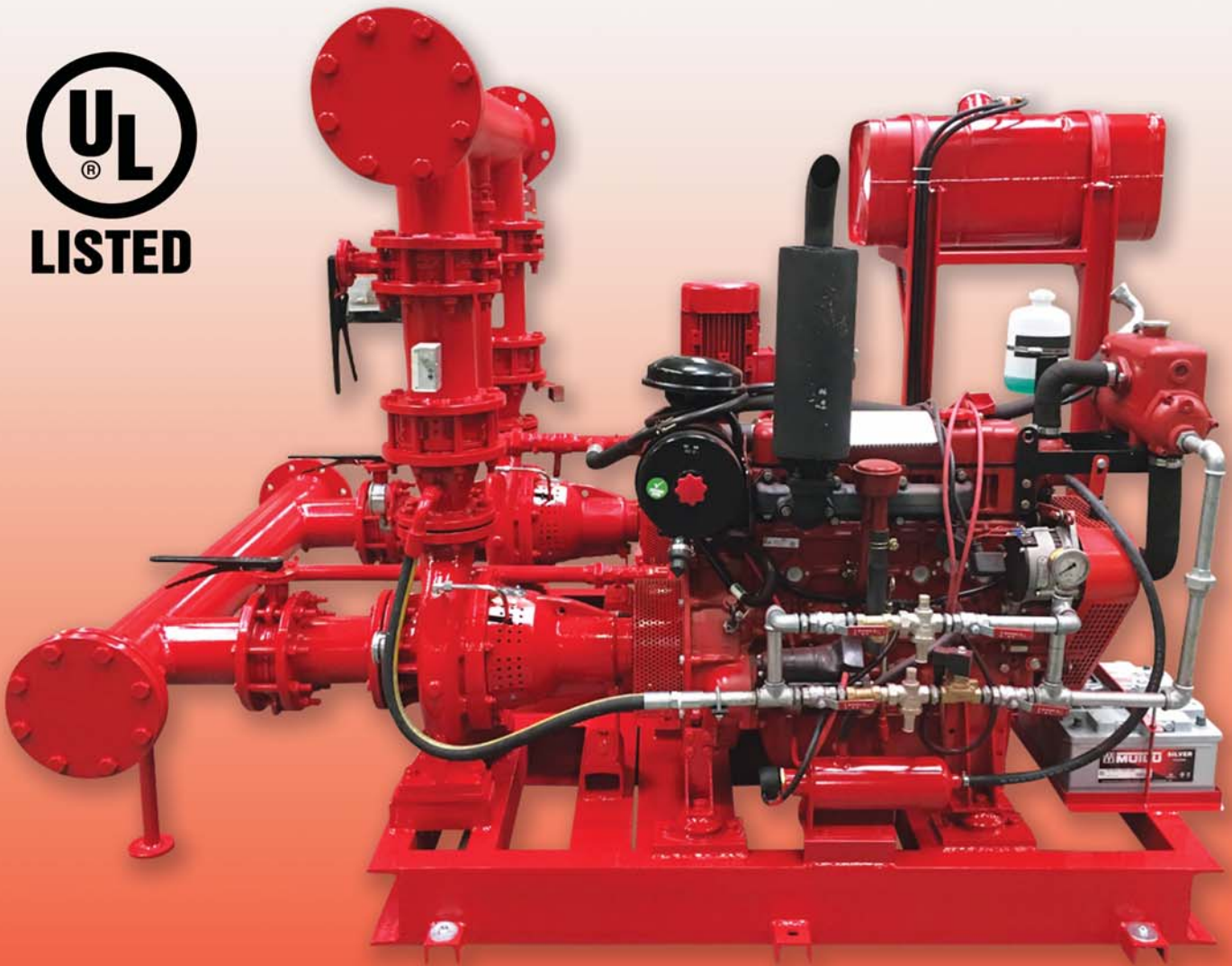


TÜRBOSAN

"PUMPS AND PUMPING SYSTEMS"



LISTED

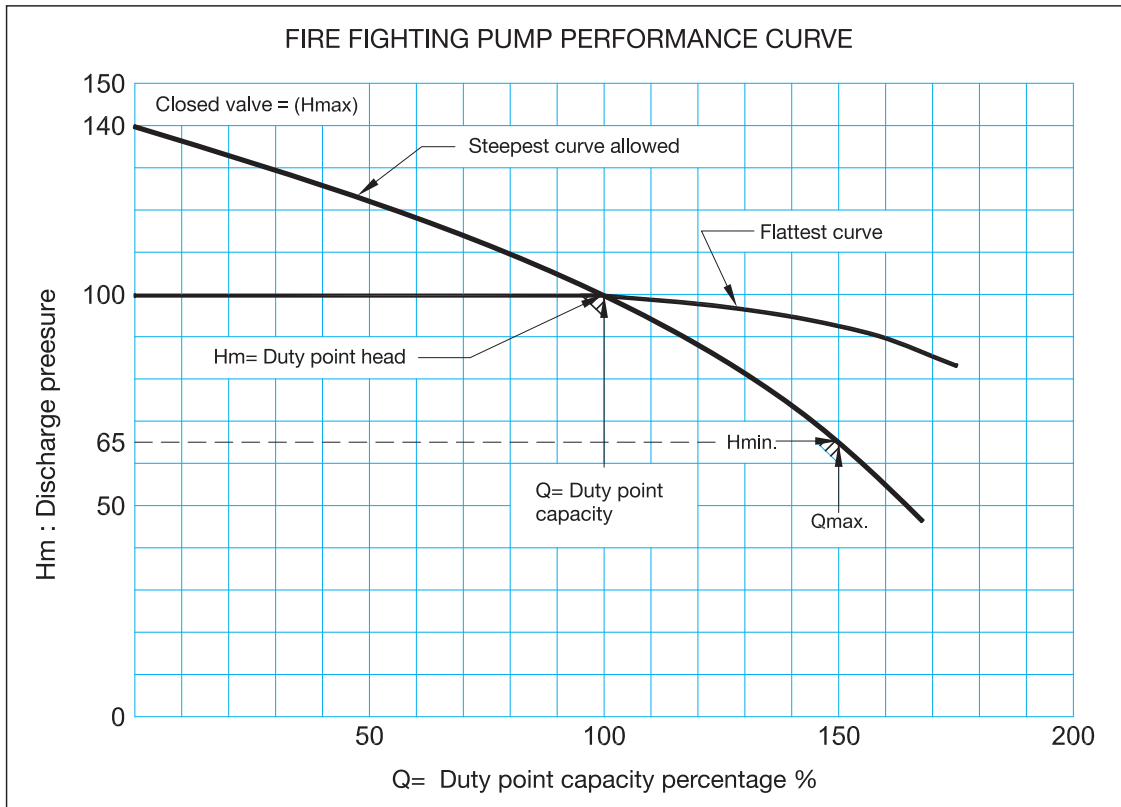


FIRE PUMPS & FIRE PUMP SETS

www.turbosan.com

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 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

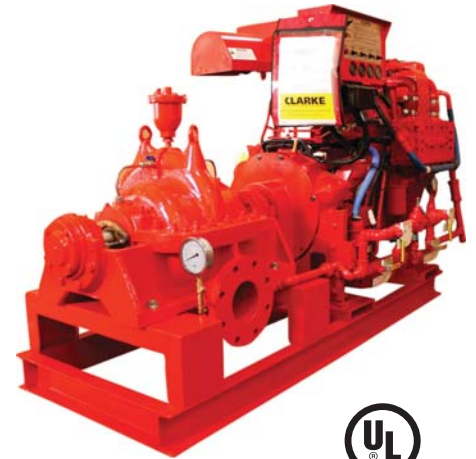
* NFPA standard table 2-20

(*) 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.

1 PSI = 0,703 m.



TURBOSAN FIRE FIGHTING PUMPS ARE UL LISTED



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 SET CONTROL SYSTEM :

- Separate control panels used for jockey pumps and for main pumps.
- Main pumps can operate as standby pump for each other or they can operate together .
- Control panels have available connections terminals for building automation.
- Electric motor of main pump has star delta connection.
- There are 2 batteries and battery charge system for diesel engine
- There is no thermal protection for main pump control panel
- Controls on electric motor driven pump on control panel door :
 - Manual start - stop button
 - Energy signal lamp
 - Test operation signal lamp
- Panel equipped with alarm signal buzzer and lamp
- Control panel supply voltage is 24 V
- Diesel engine control panel has following items on panel door:
 - Diesel engine operating lamp
 - Diesel engine failure signal lamp
 - Low battery warning signal
 - Minimum fuel signal lamp
- Panels have IP 54 protection
- Panels do not have a protection system which do not allow the system to operate in case of any failure.
- In case of electric supply cut diesel engine operates automatically.



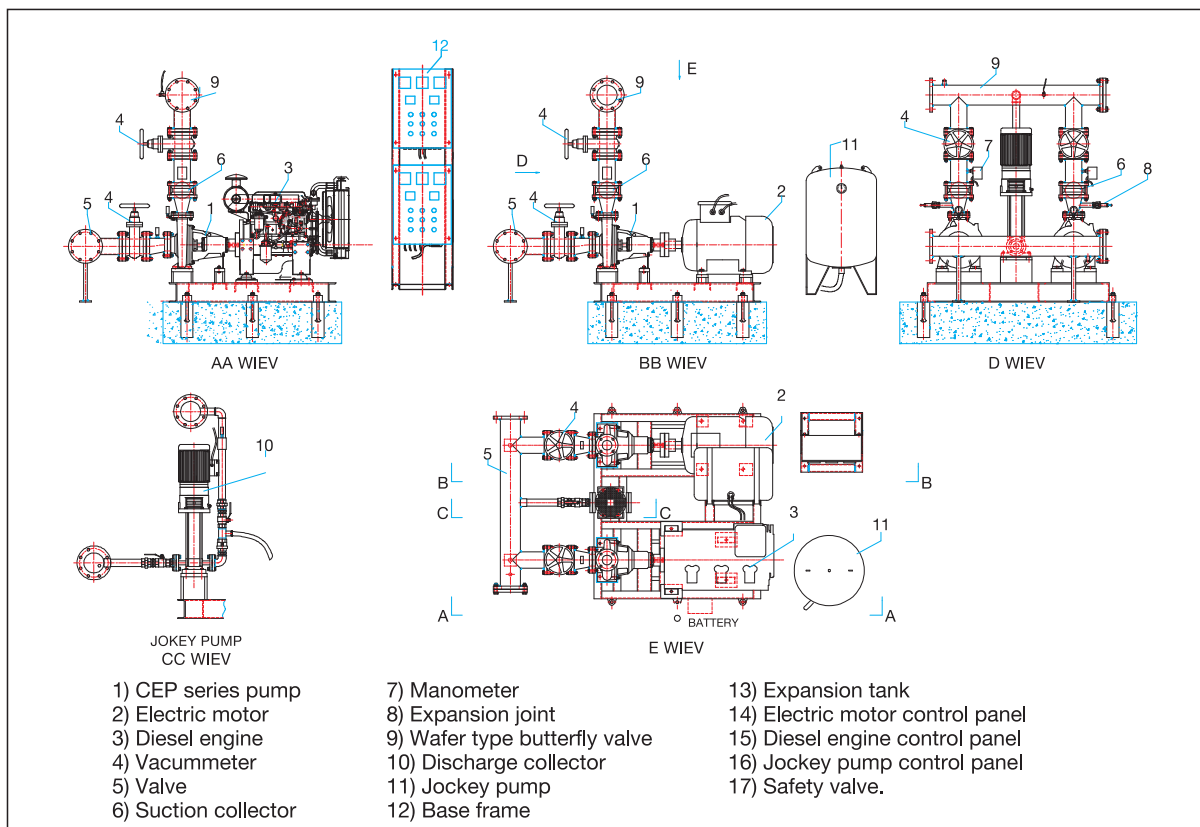
DIESEL ENGINE DRIVEN PUMP COMPONENTS:

Diesel engine is for keeping fire fighting systems in case of electric supply cut.

- 1) Pump complying with NFPA 20 standart
- 2) Diesel engine
- 3) Control panel
- 4) Base frame and coupling
- 5) Battery
- 6) Pressure switch
- 7) Manometer
- 8) Fuel tank
- 9) Exhaust silencer.

ELECTRIC MOTOR DRIVEN PUMP COMPONENTS:

- 1) Pump complying with NFPA 20 standart
- 2) Electric motor
- 3) Control panel
- 4) Base frame and coupling
- 5) Pressure switch
- 6) Manometer



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.
- Turbosan fire fighting pump UL listing numbers;

NORM pumps : EX 26604

CEP pumps : EX 26605

END SUCTION NORM PUMP MATERIAL				
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
	PAINTING	RAL 3020		

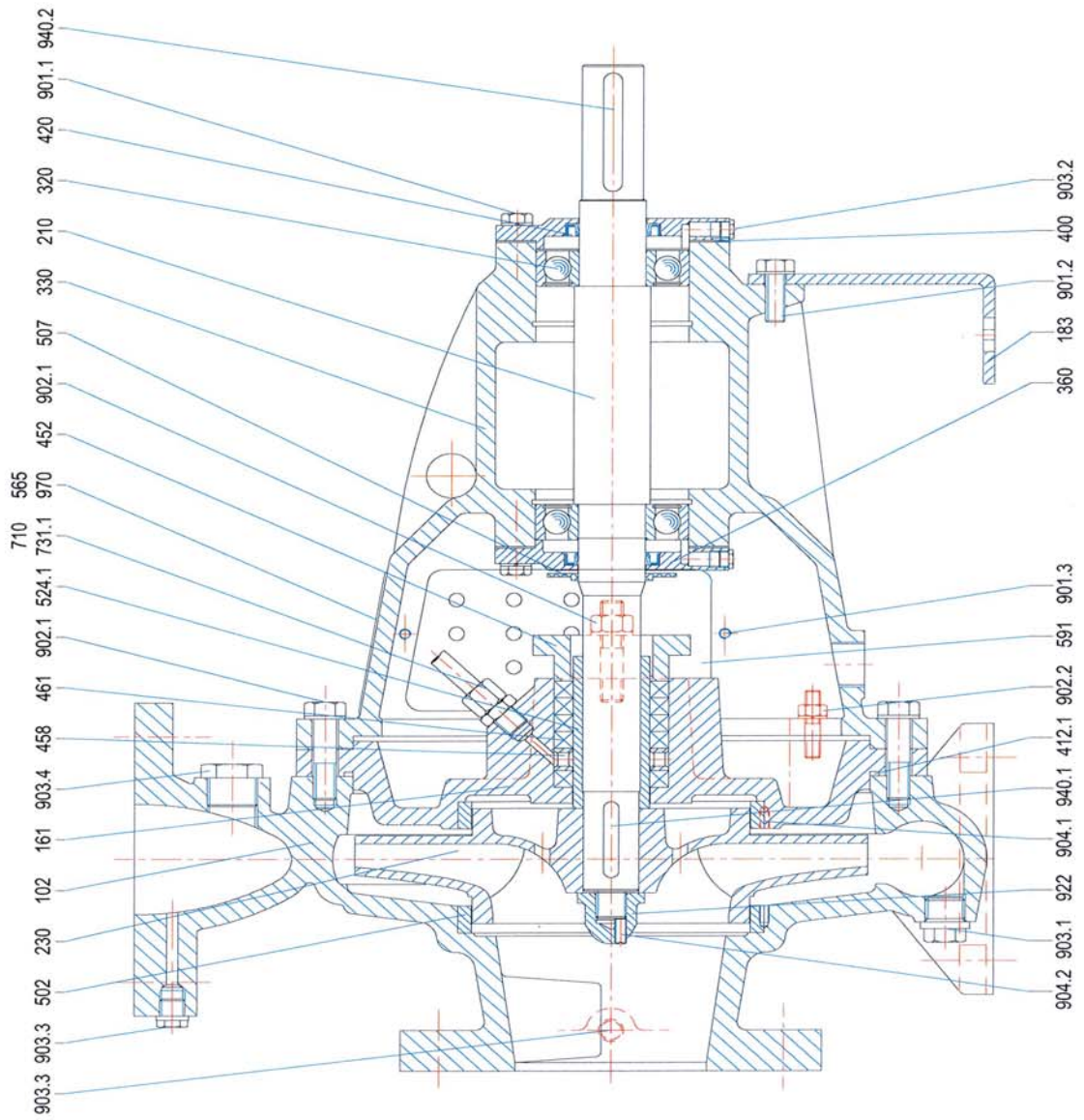
SPLIT CASE CEP PUMP MATERIAL				
PARTS NO:	COMPONENT DESCRIPTION	MATERIAL	ALTERNATIVE MATERIAL-1	ALTERNATIVE MATERIAL-2
102.1	CASING	GGG40	AISI316	DUPLEX
102.2	COVER	GGG40	AISI316	DUPLEX
210	SHAFT	AISI316	AISI316	DUPLEX
225.1	BEARING RING_INTERNAL	GG25	GG25	GG25
225.2	BEARING RING_EXTERNAL	GG25	GG25	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
	PAINTING	RAL 3020		

Explanation:

Material : It is the standart material.

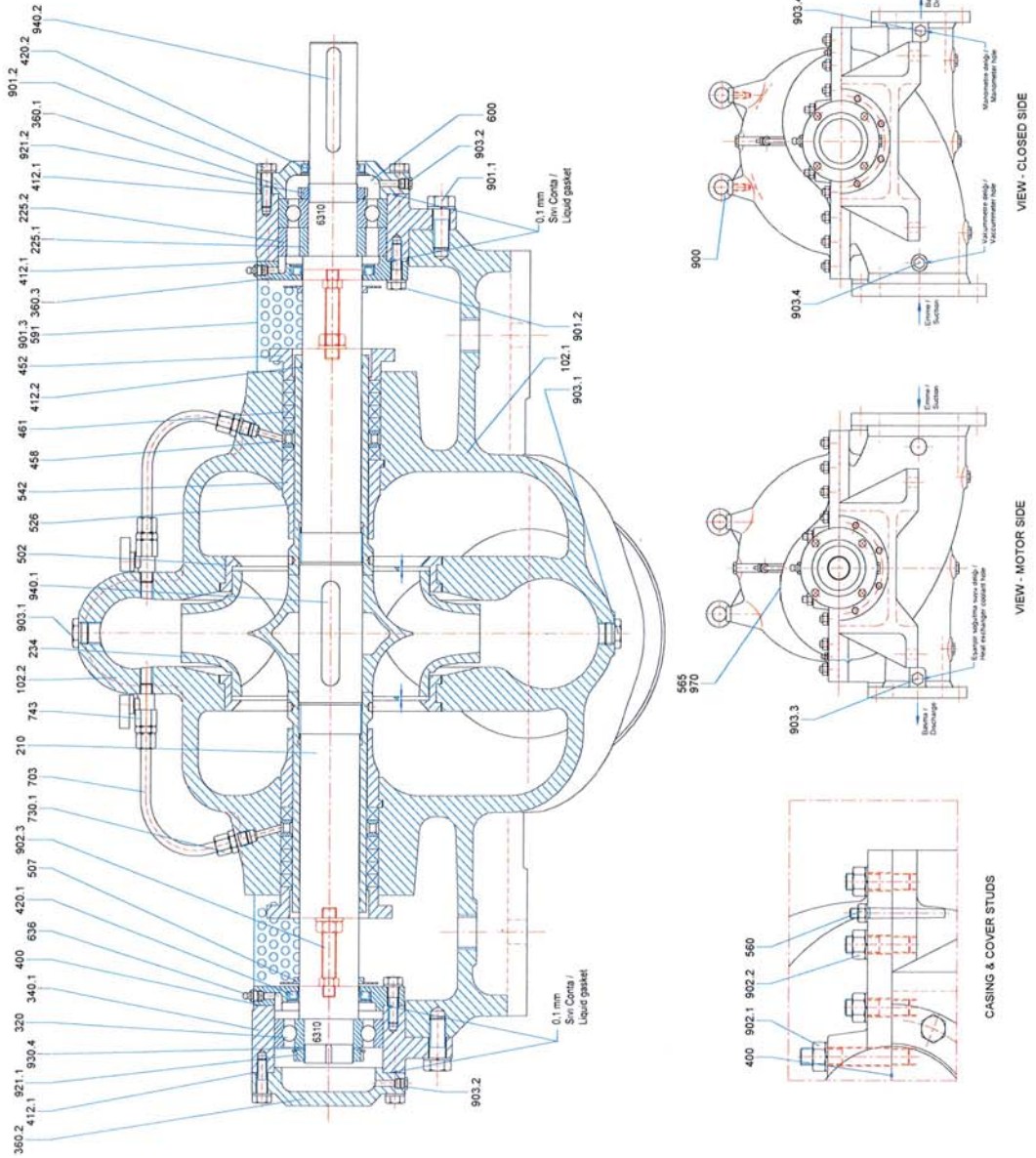
Alternative Material-1 and Alternative Material-2: It is the optional material list.

NORM PUMP SECTIONAL DRAWING

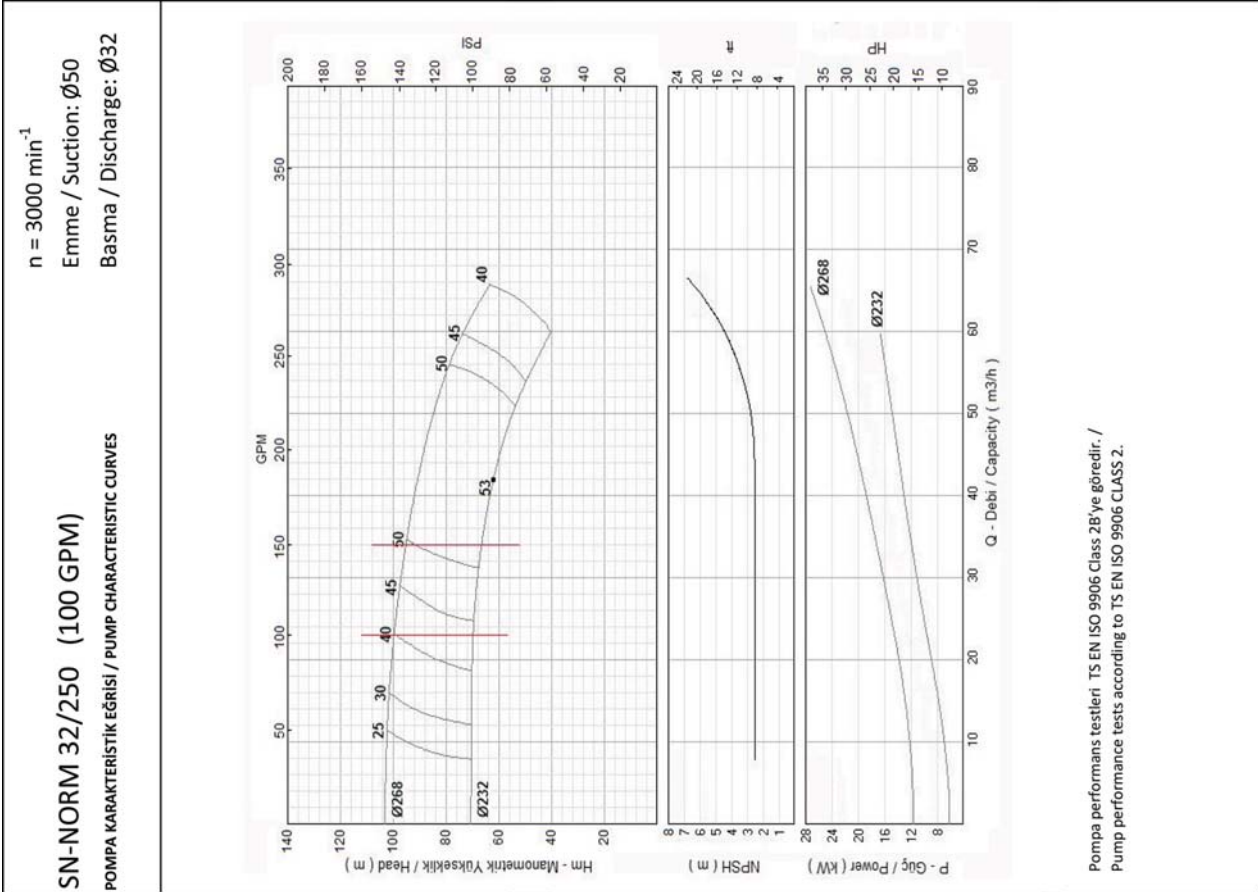


Part No	Part Name
102	Volute
161	Stuffing Box
183	Support Foot
210	Shaft
230	Impeller
320	Bearing
330	Bearing Frame
360	Bearing Cover
400	Bearing Cover Gasket
412.1	O-Ring
420	Oil Seal
452	Gland
458	Lantern Ring
461	Packing Seal
502	Wear Ring
507	Water Thrower
524.1	Shaft Sleeve
565	Rivet
591	Guard Plate
636	Grease Nipple
710	Pipe
731.1	Nipple
731.2	Elbow
901.1	Bolt
901.2	Bolt
901.3	Bolt
901.4	Bolt
902.1	Stud
902.2	Stud
904.1	Plug
903.1	Plug
903.2	Plug
903.3	Plug
903.4	Plug
904.1	Setscrew
904.2	Setscrew
940.1	Key
940.2	Key
970	Pump Label

SPLIT CASE PUMP SECTIONAL DRAWING

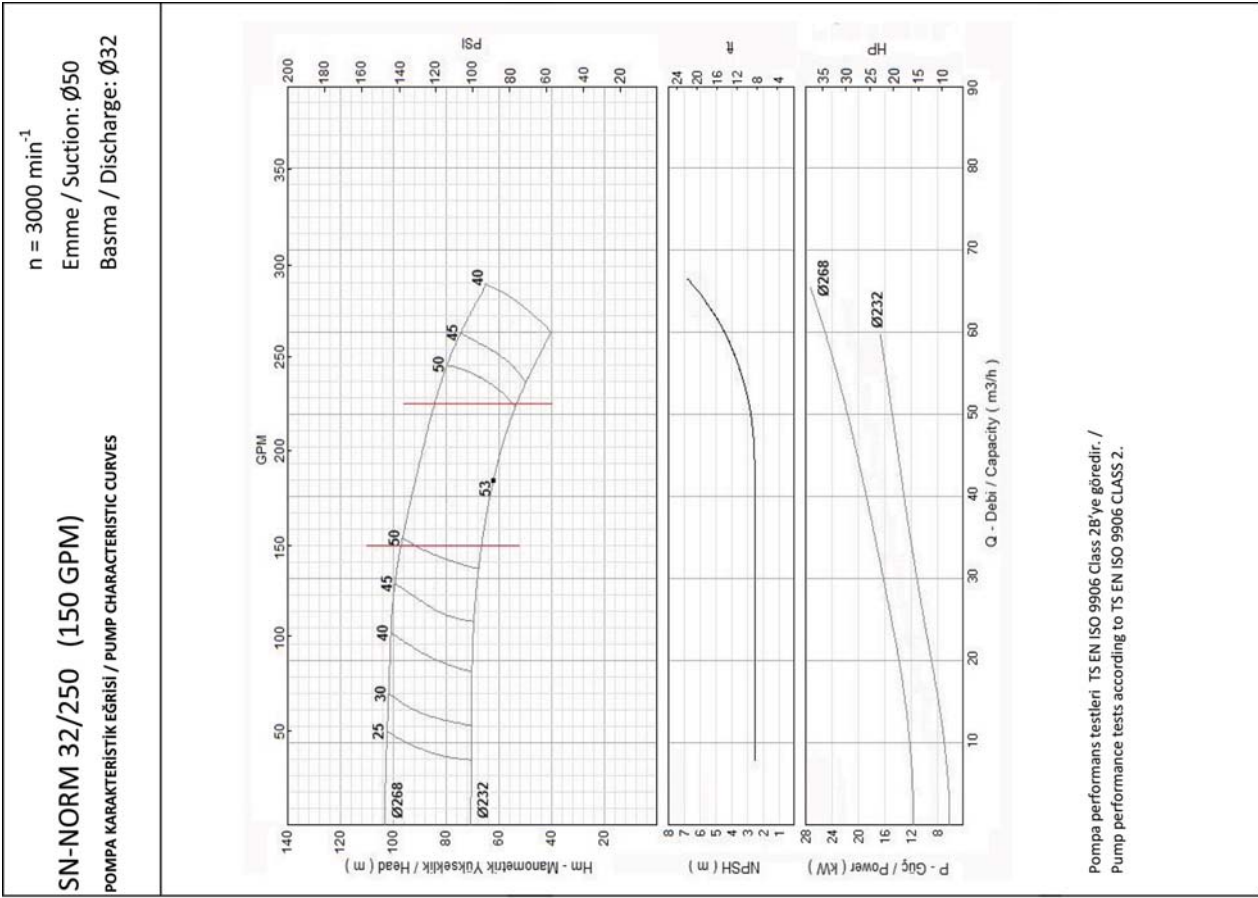
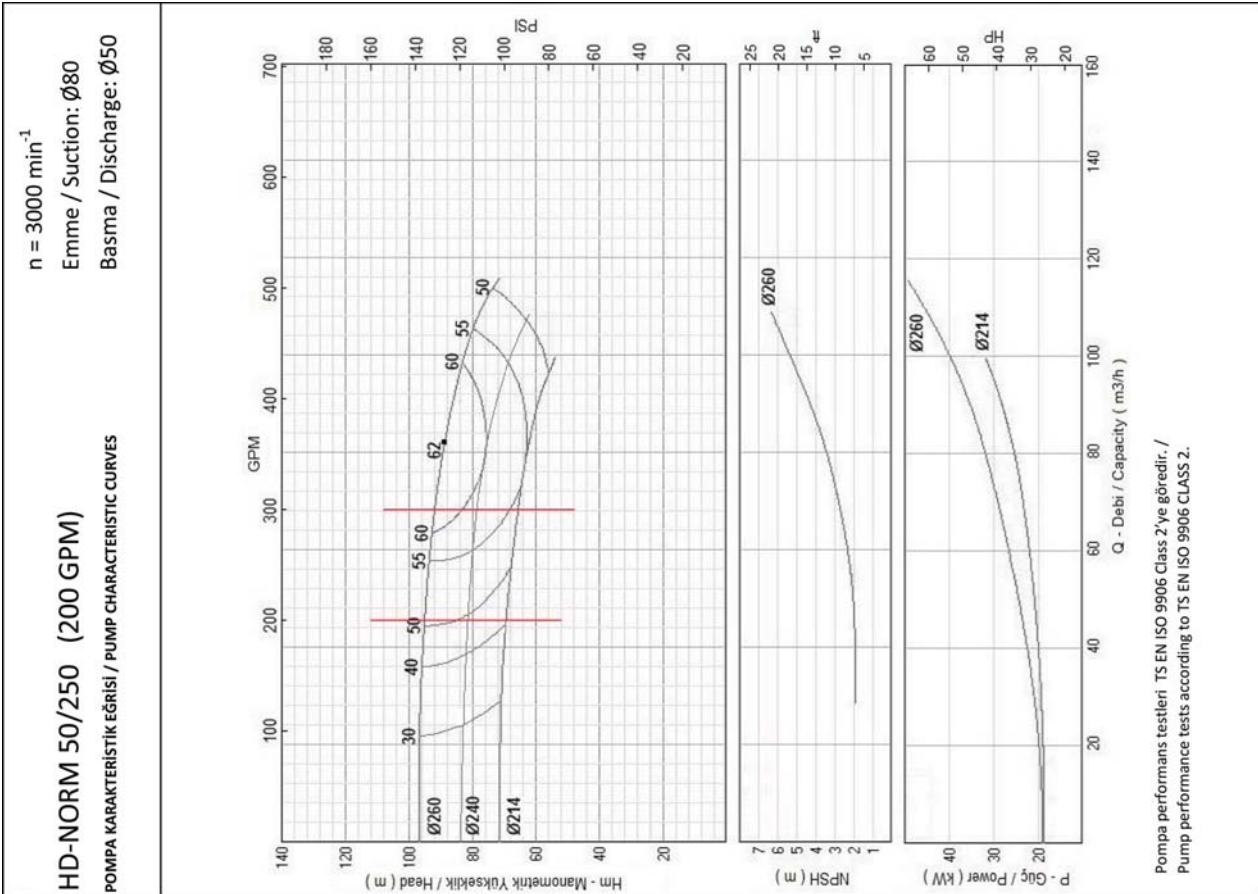


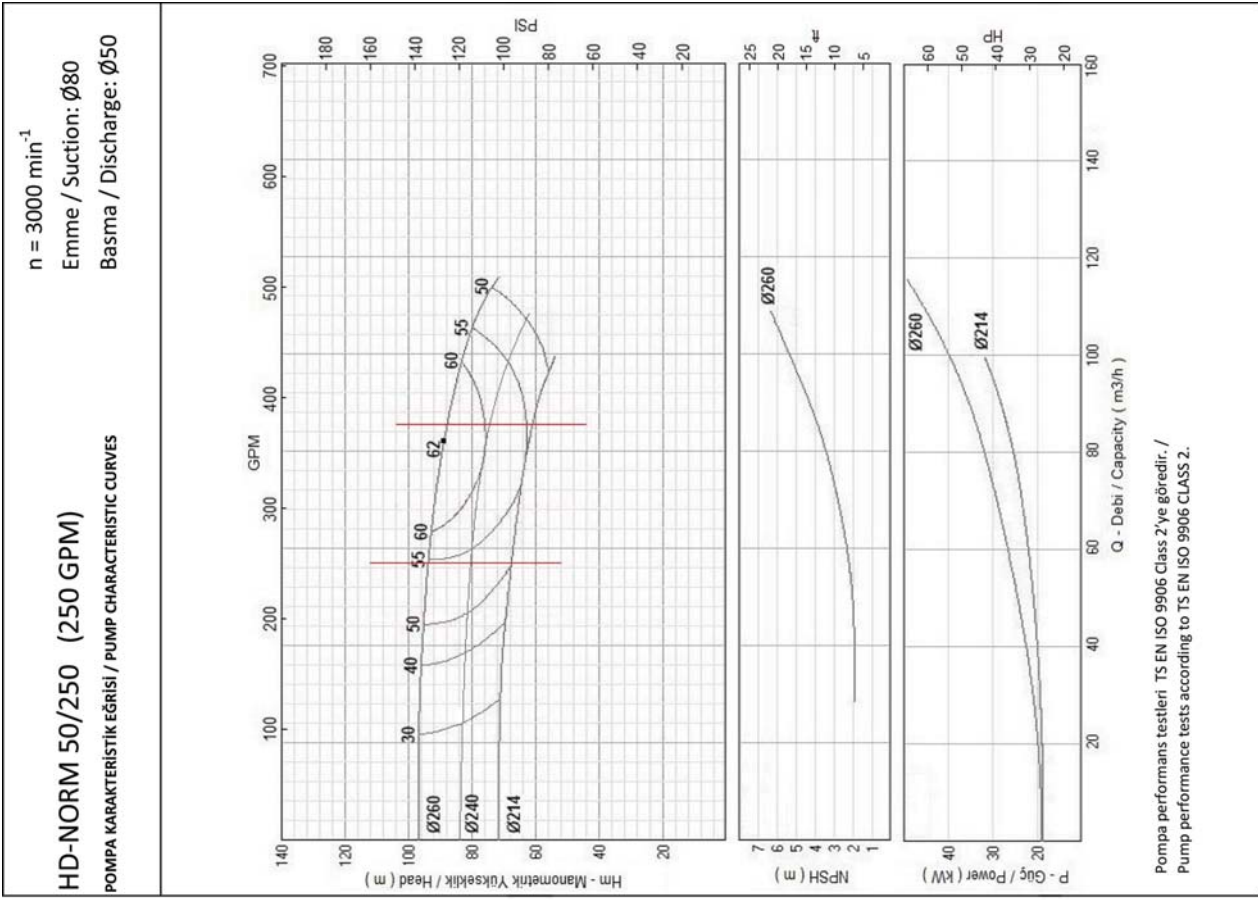
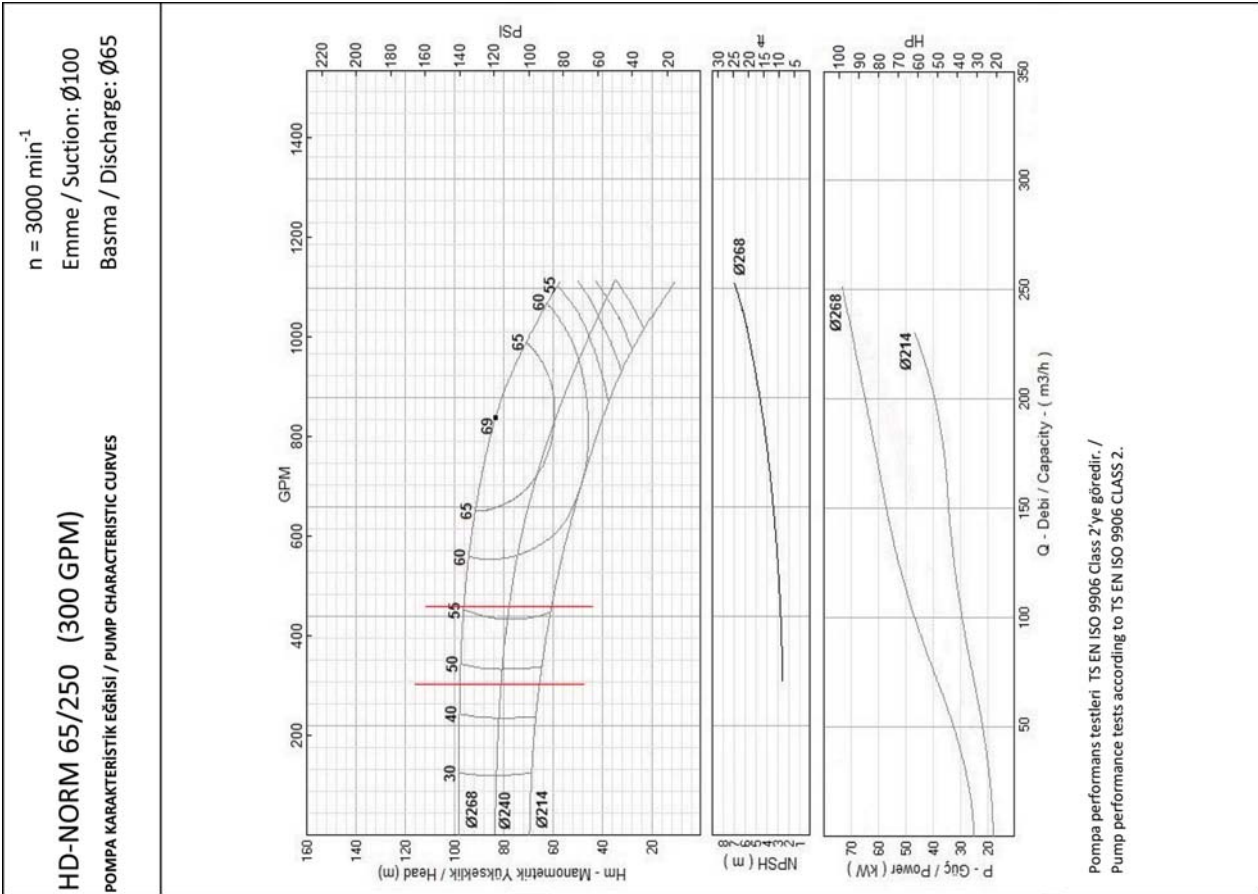
Part No	Part Name
102.1	Casing
102.2	Cover
210	Shaft
225.1	Bearing Ring-Inner
225.2	Bearing Ring-External
234	Impeller
320	Bearing
340.1	Bearing Housing
360.1	Bearing Cover-Motor side
360.2	Bearing Cover-Closed side
360.3	Bearing Cover-Inside
400	O-Ring
412.1	Liquid Gasket
412.2	O-Ring
420.1	Oil Seal
420.2	Oil Seal
452	Gland
458	Lantern Ring
461	Packing Seal
502	Wear Ring
507	Water Thrower
526	Shaft Sleeve
542	Stuffing Box Bushing
560	Centering taper pin
565	Rivet
591	Guard Plate
636	Grease Nipple
703	Pipe
730.1	Nipple
743	Globe Valve
900	Lifting Eye
901.1	Bolt
901.2	Bolt
901.3	Bolt
902.1	Stud
902.2	Stud
902.3	Stud
903.1	Plug
903.2	Plug
903.3	Plug
903.4	Plug
921.1	Nut KM
921.2	Nut KM
930.4	Washer MB
940.1	Key
940.2	Key
970	Pump Label

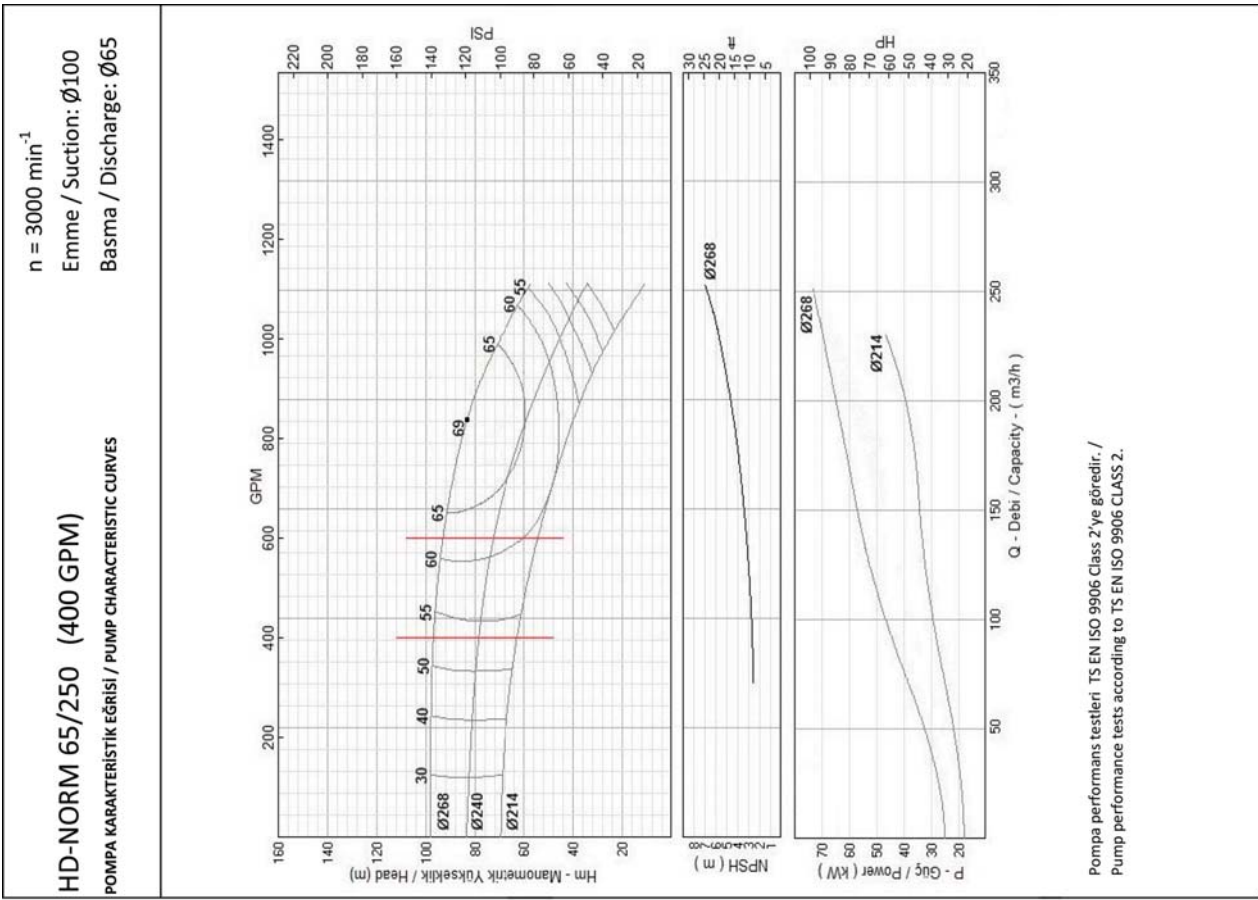
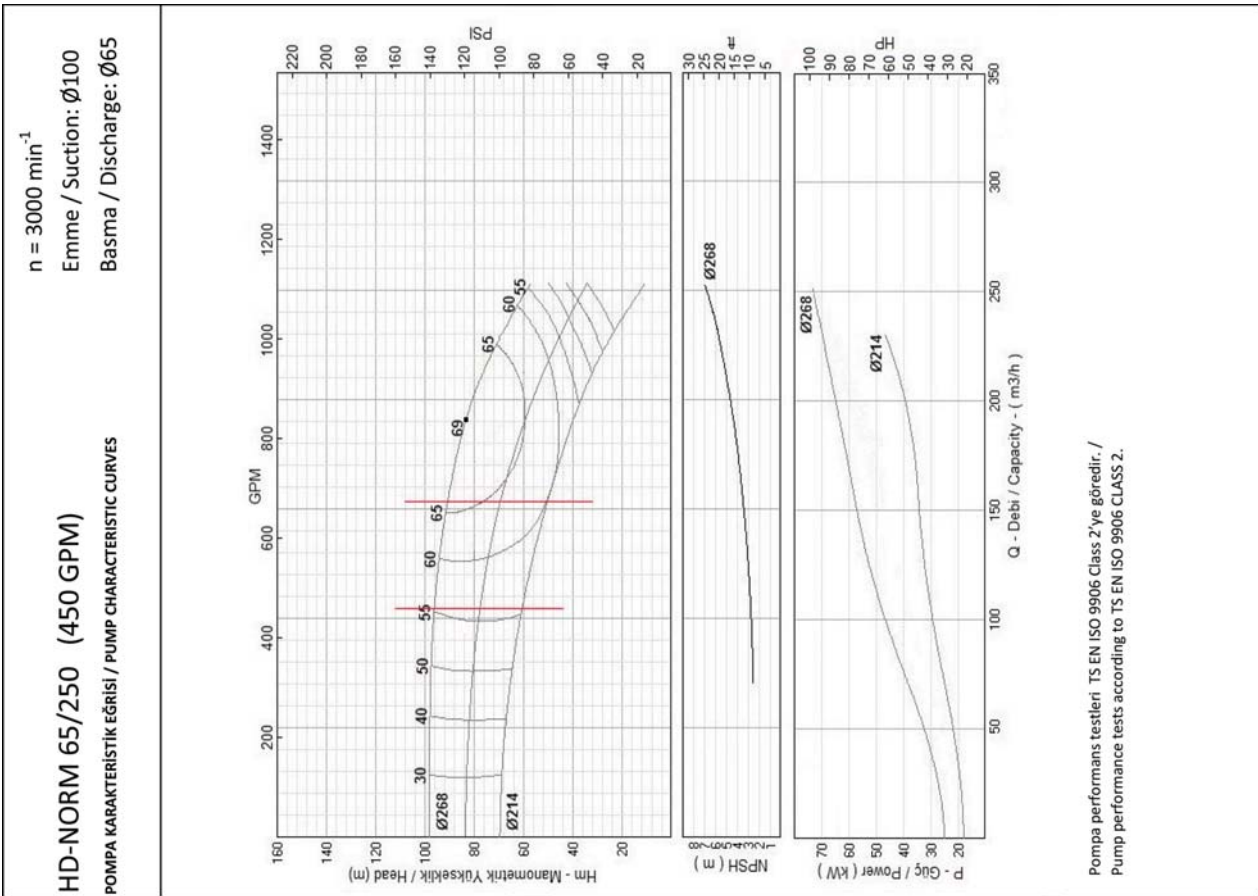


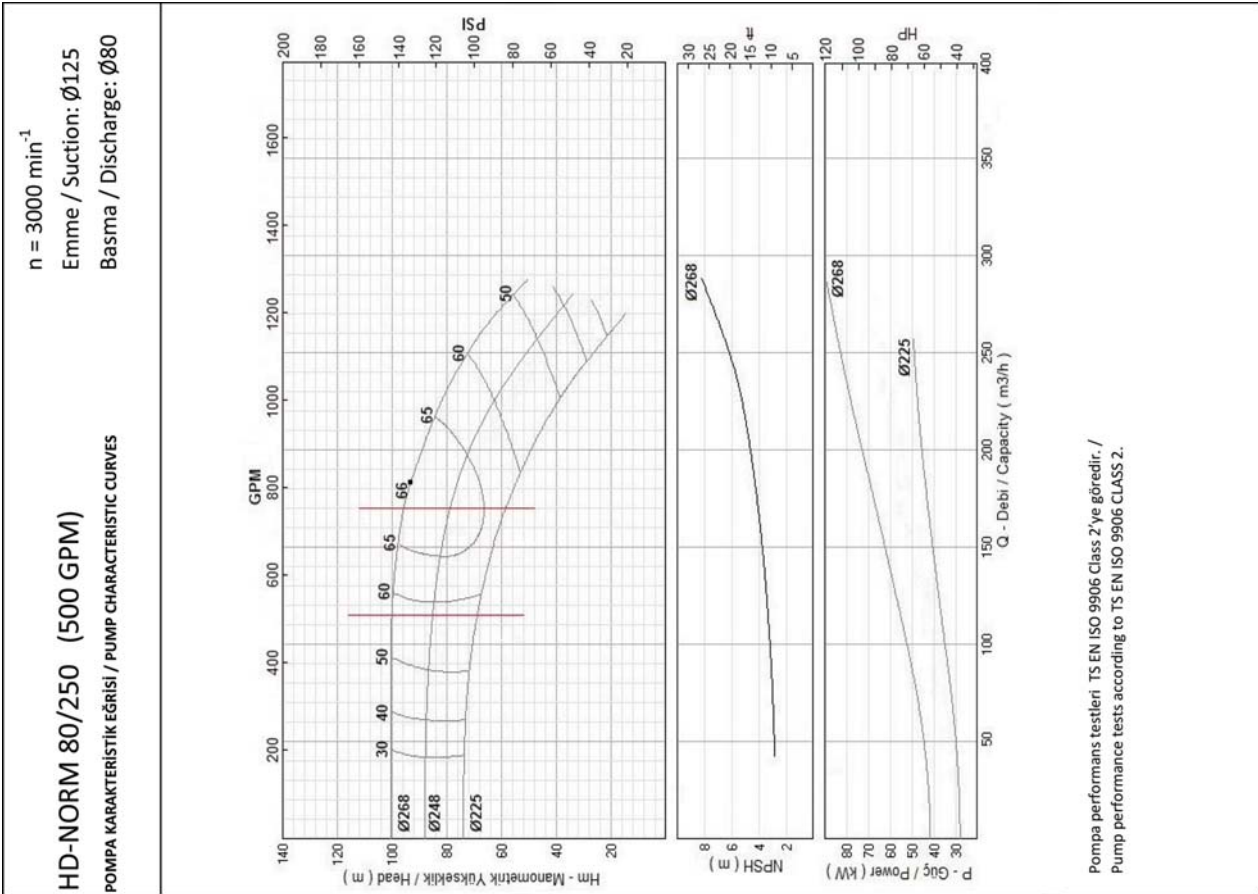
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Pump performance tests according to TS EN ISO 9906 CLASS 2.

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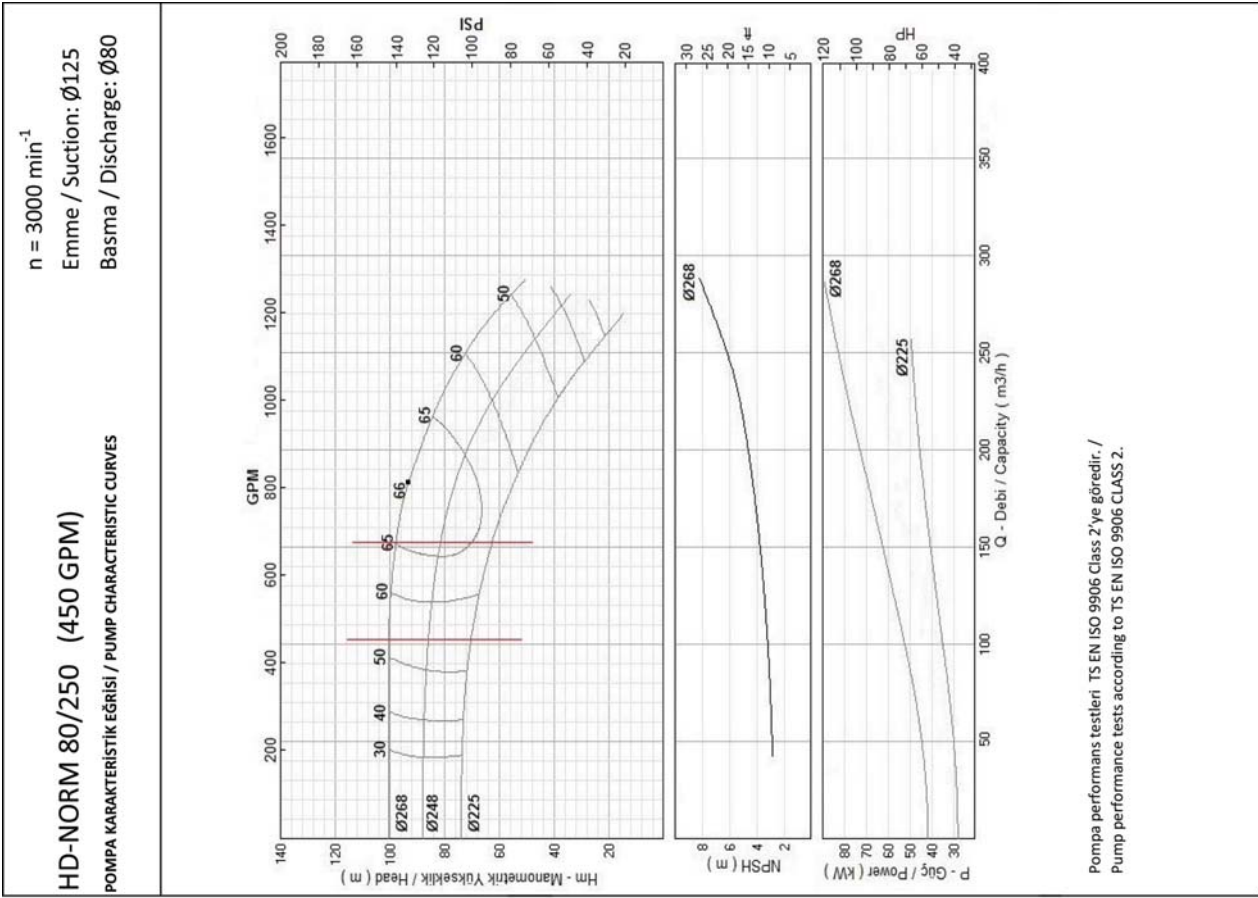




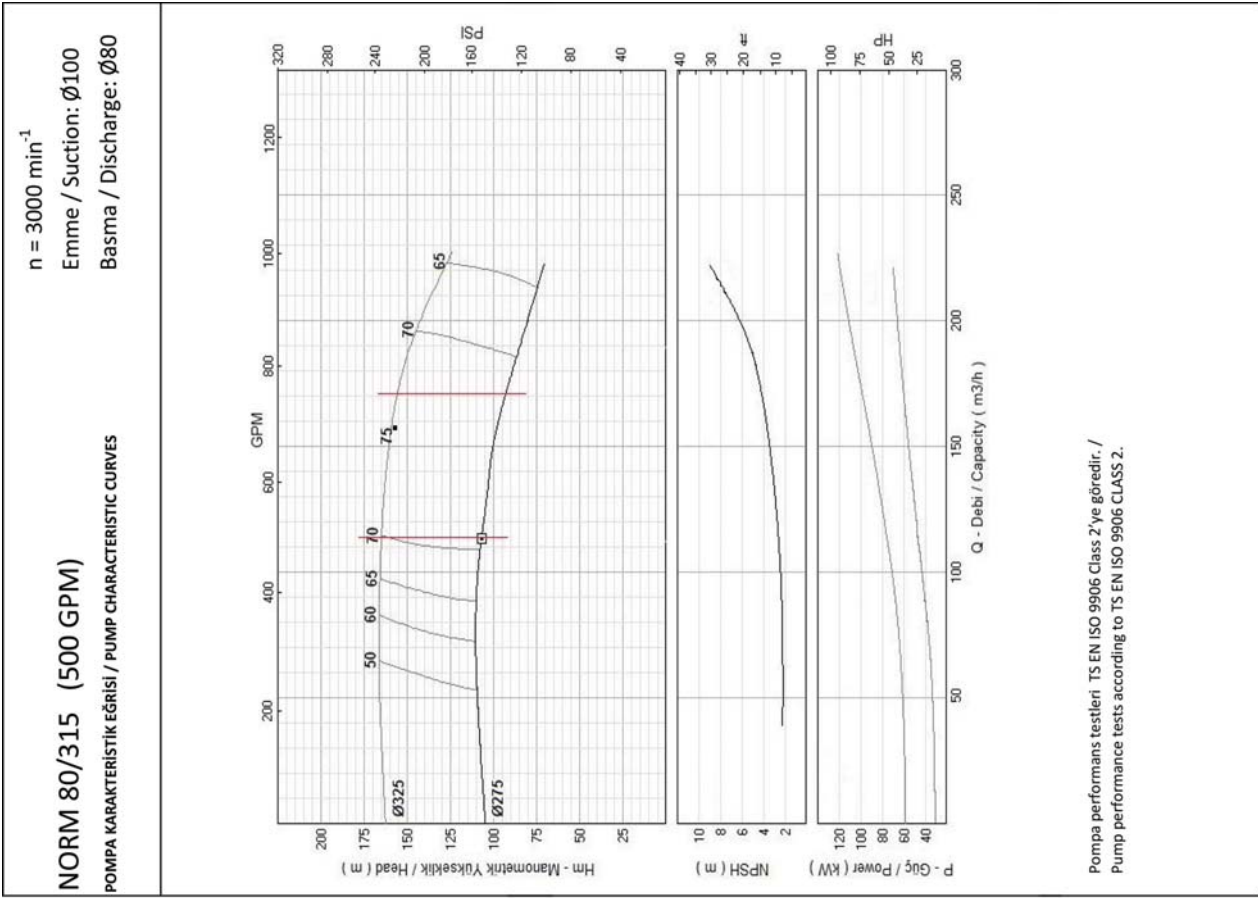
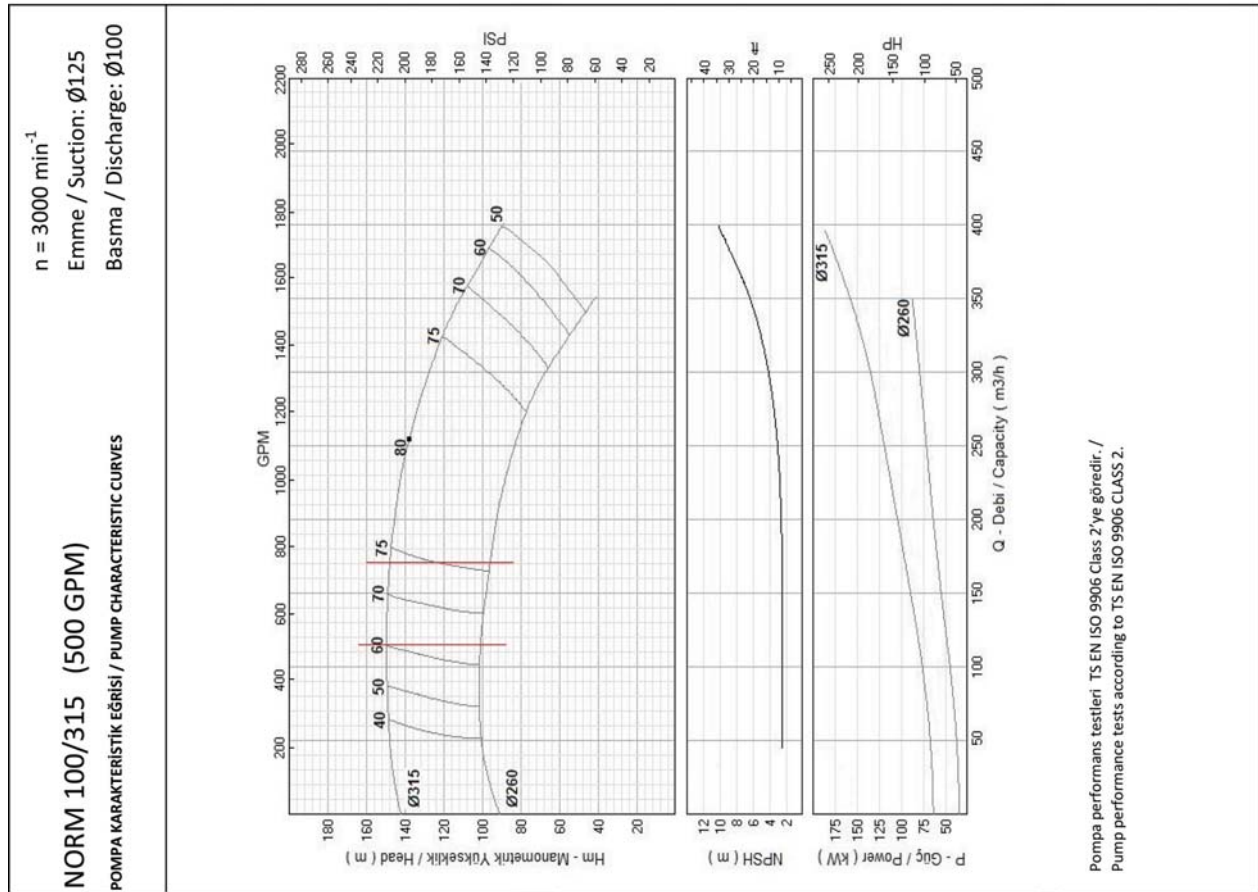




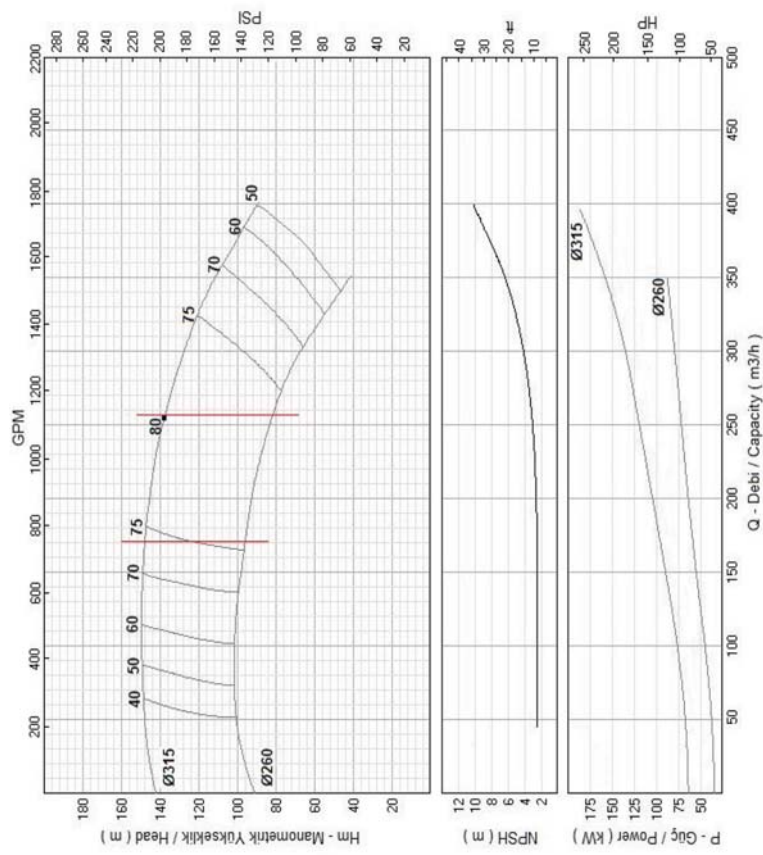
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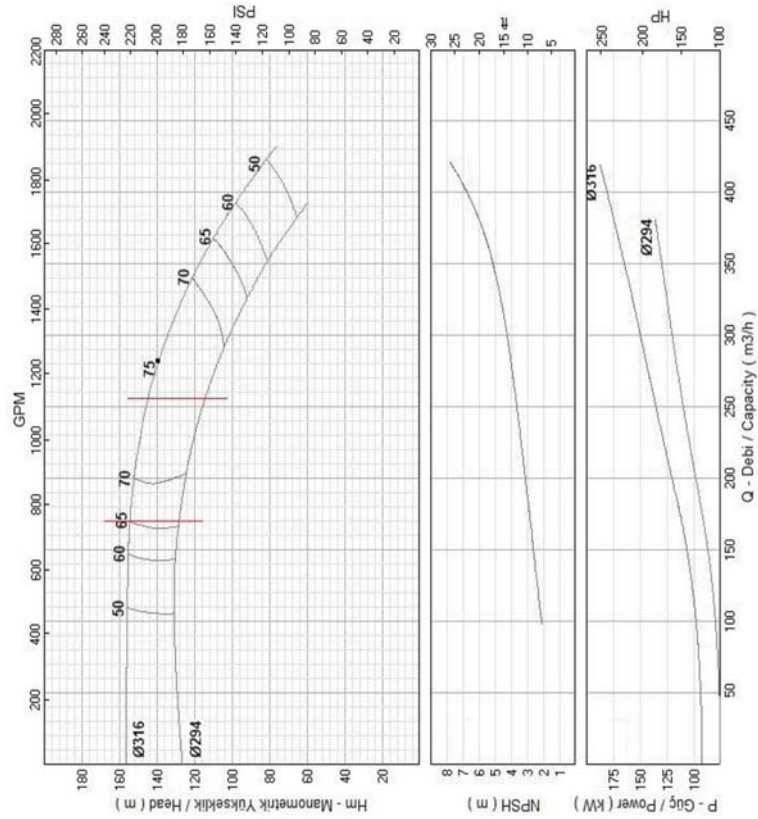


NORM 100/315 (750 GPM)
 POMPA KARAKTERİSTİK EĞRİSİ / PUMP CHARACTERISTIC CURVES
 n = 3000 min⁻¹
 Emme / Suction: Ø125
 Basma / Discharge: Ø100

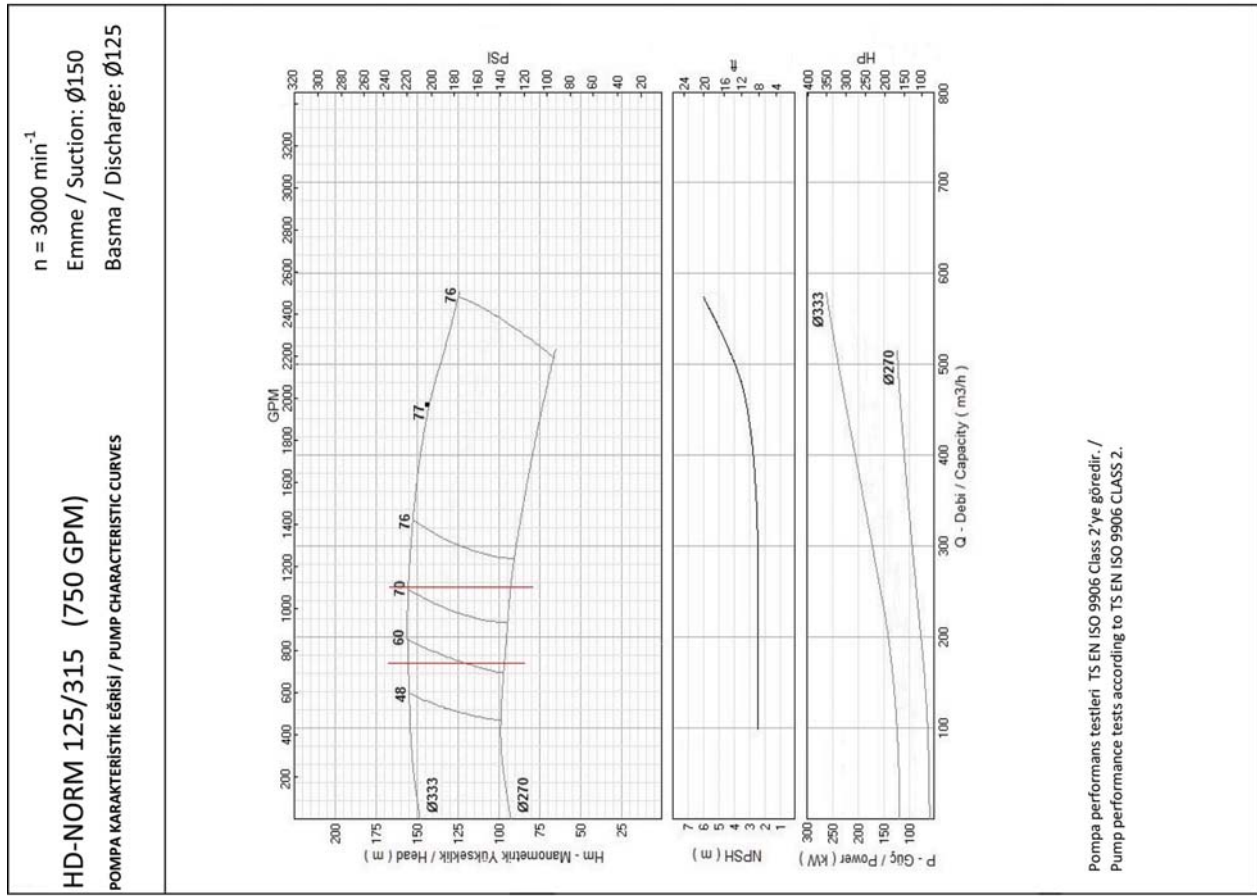
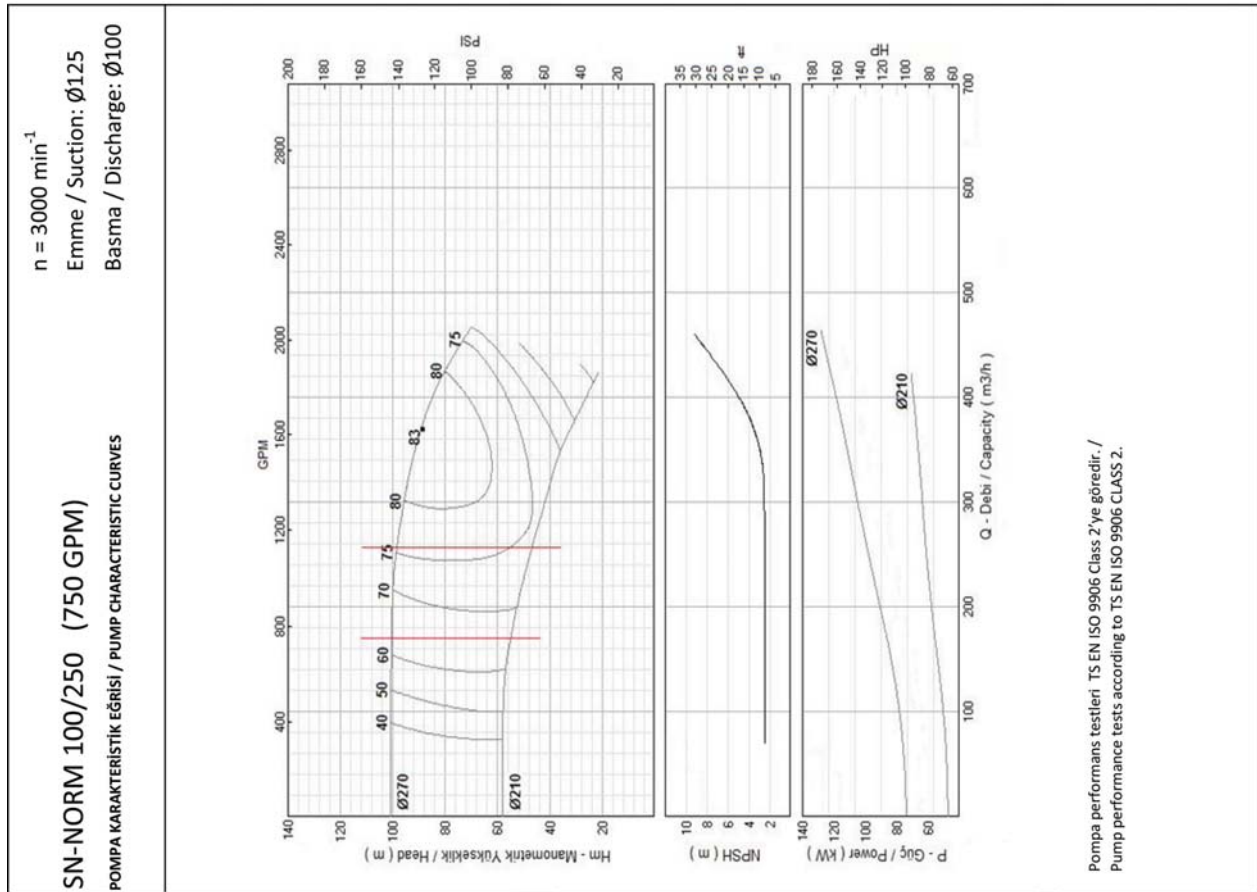


Pompa performans testleri TS EN ISO 9906 Class 2'ye göredir. /
 Pump performance tests according to TS EN ISO 9906 CLASS 2.

HD-NORM 100/315 (750 GPM)
 POMPA KARAKTERİSTİK EĞRİSİ / PUMP CHARACTERISTIC CURVES
 n = 3000 min⁻¹
 Emme / Suction: Ø150
 Basma / Discharge: Ø100



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 Pump performance tests according to TS EN ISO 9906 CLASS 2.



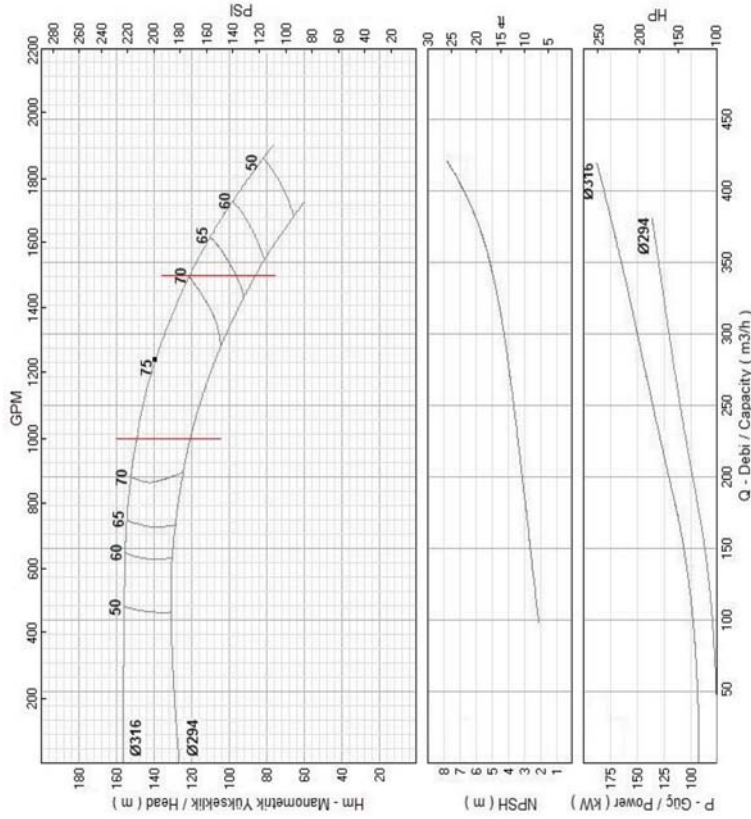
$n = 3000 \text{ min}^{-1}$

Emme / Suction: $\varnothing 150$

Basma / Discharge: $\varnothing 100$

HD-NORM 100/315 (1000 GPM)

POMPA KARAKTERİSTİK EĞRİSİ / PUMP CHARACTERISTIC CURVES



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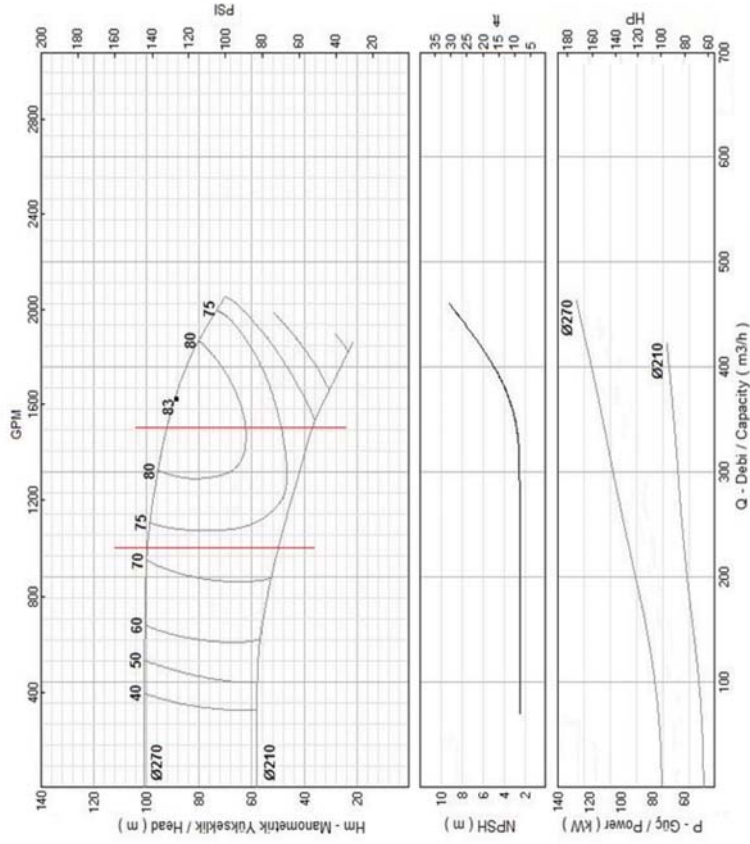
$n = 3000 \text{ min}^{-1}$

Emme / Suction: $\varnothing 125$

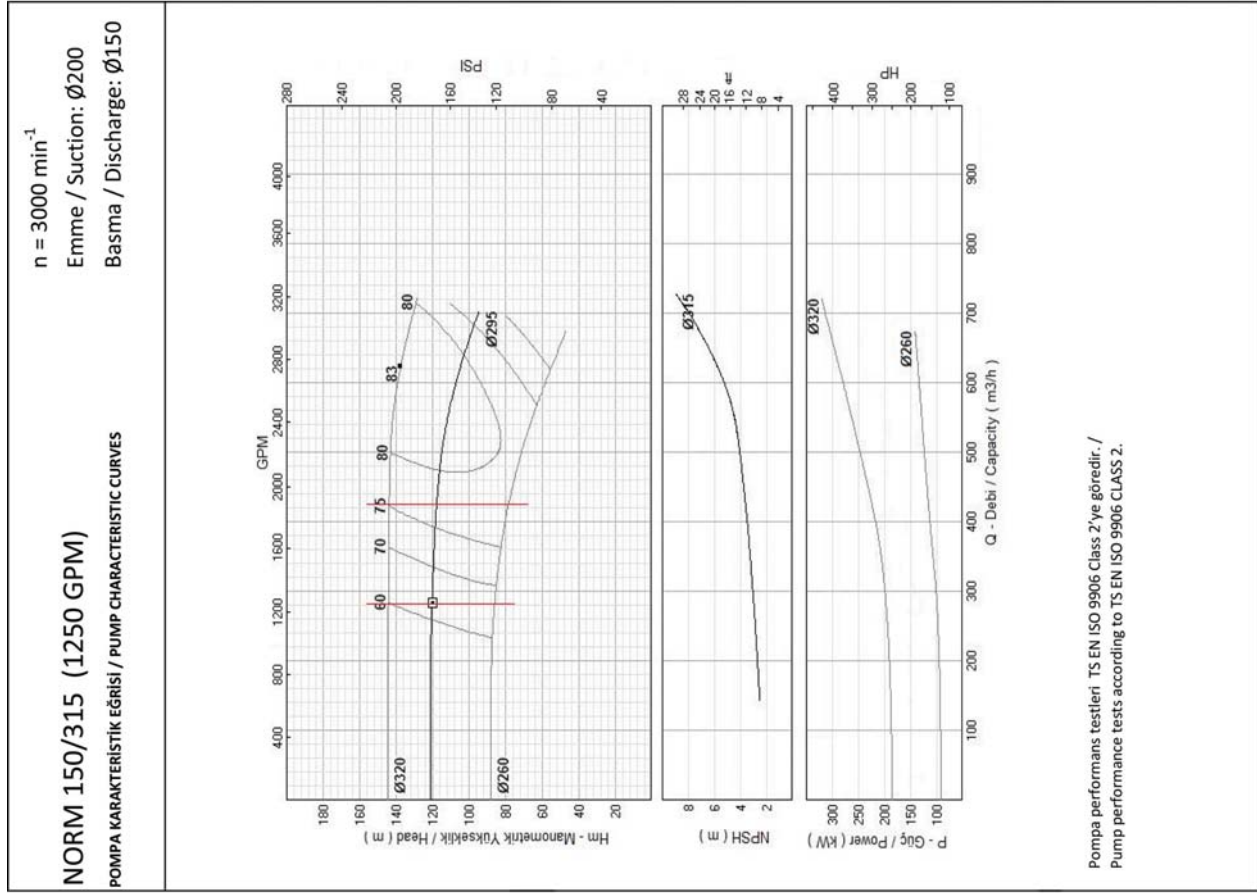
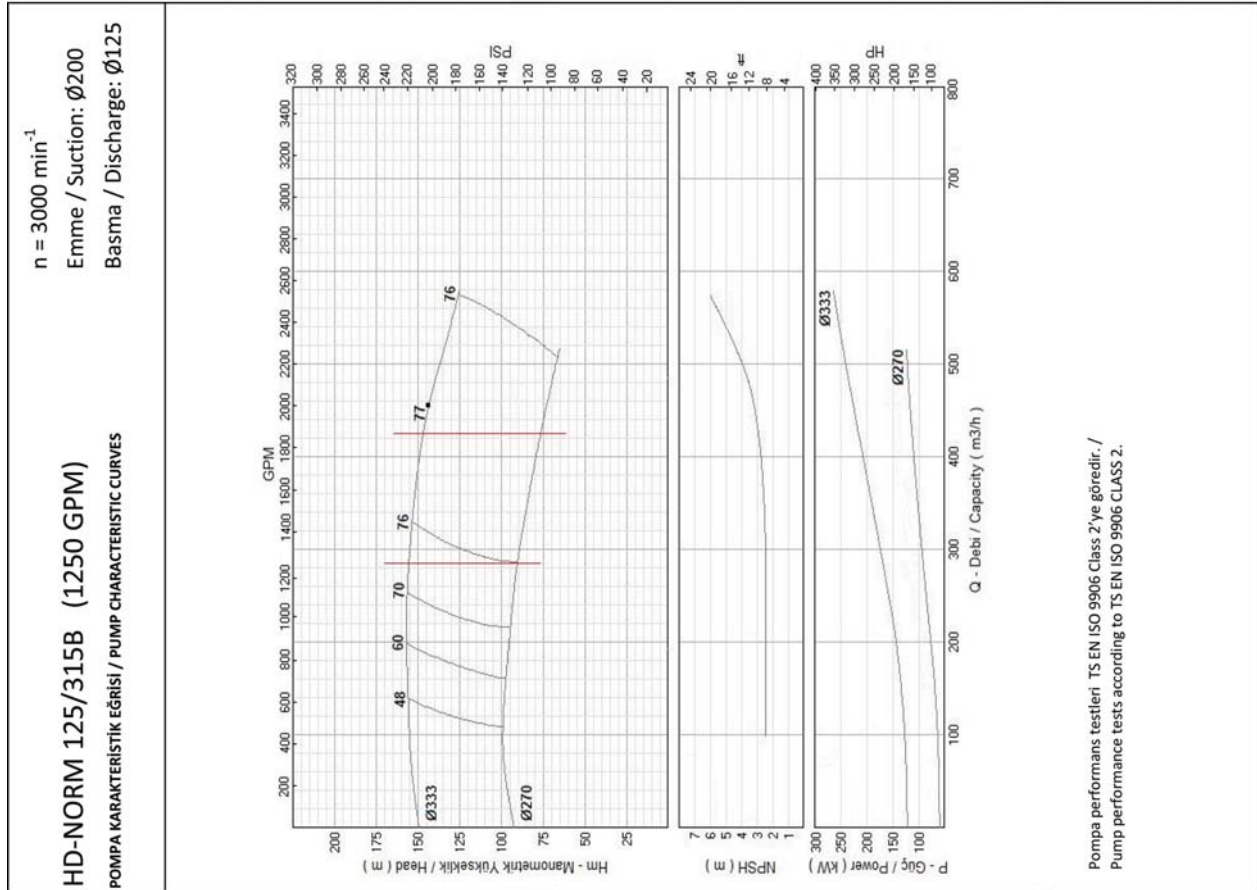
Basma / Discharge: $\varnothing 100$

SN-NORM 100/250 (1000 GPM)

POMPA KARAKTERİSTİK EĞRİSİ / PUMP CHARACTERISTIC CURVES



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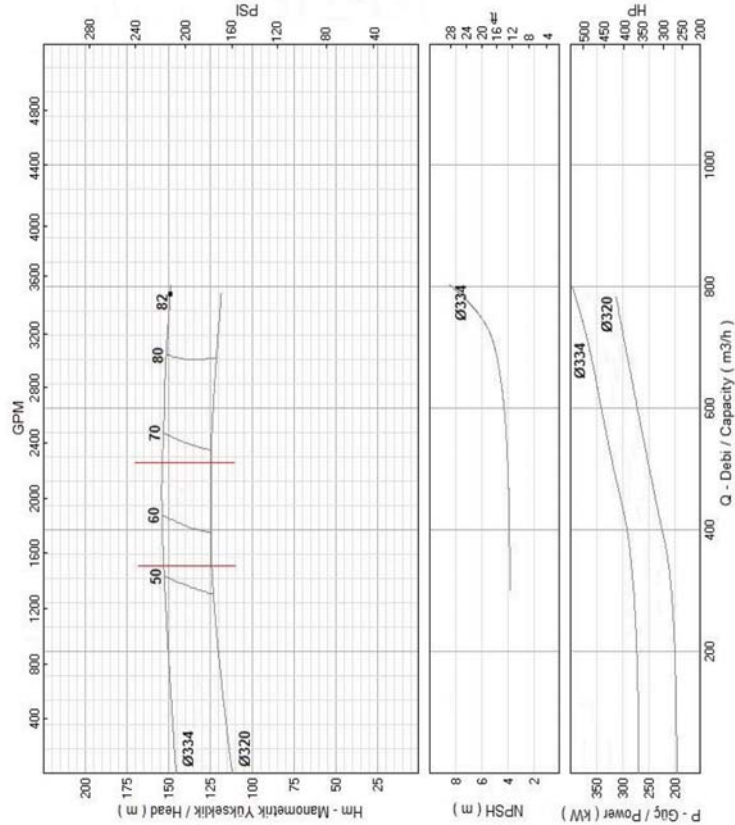
$n = 3000 \text{ min}^{-1}$

Emme / Suction: $\varnothing 200$

Basma / Discharge: $\varnothing 150$

NORM EFF 150/315B (1500 GPM)

POMPA KARAKTERİSTİK EĞRİSİ / PUMP CHARACTERISTIC CURVES



Pompa performans testleri TS EN ISO 9906 Class 2'ye göredir. / Pump performance tests according to TS EN ISO 9906 CLASS 2.

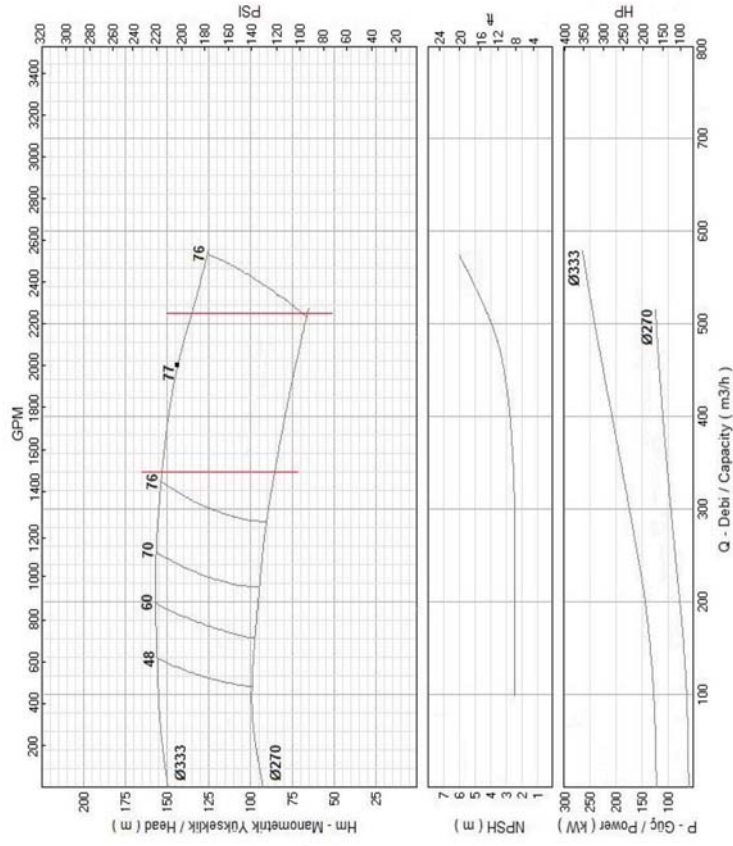
$n = 3000 \text{ min}^{-1}$

Emme / Suction: $\varnothing 200$

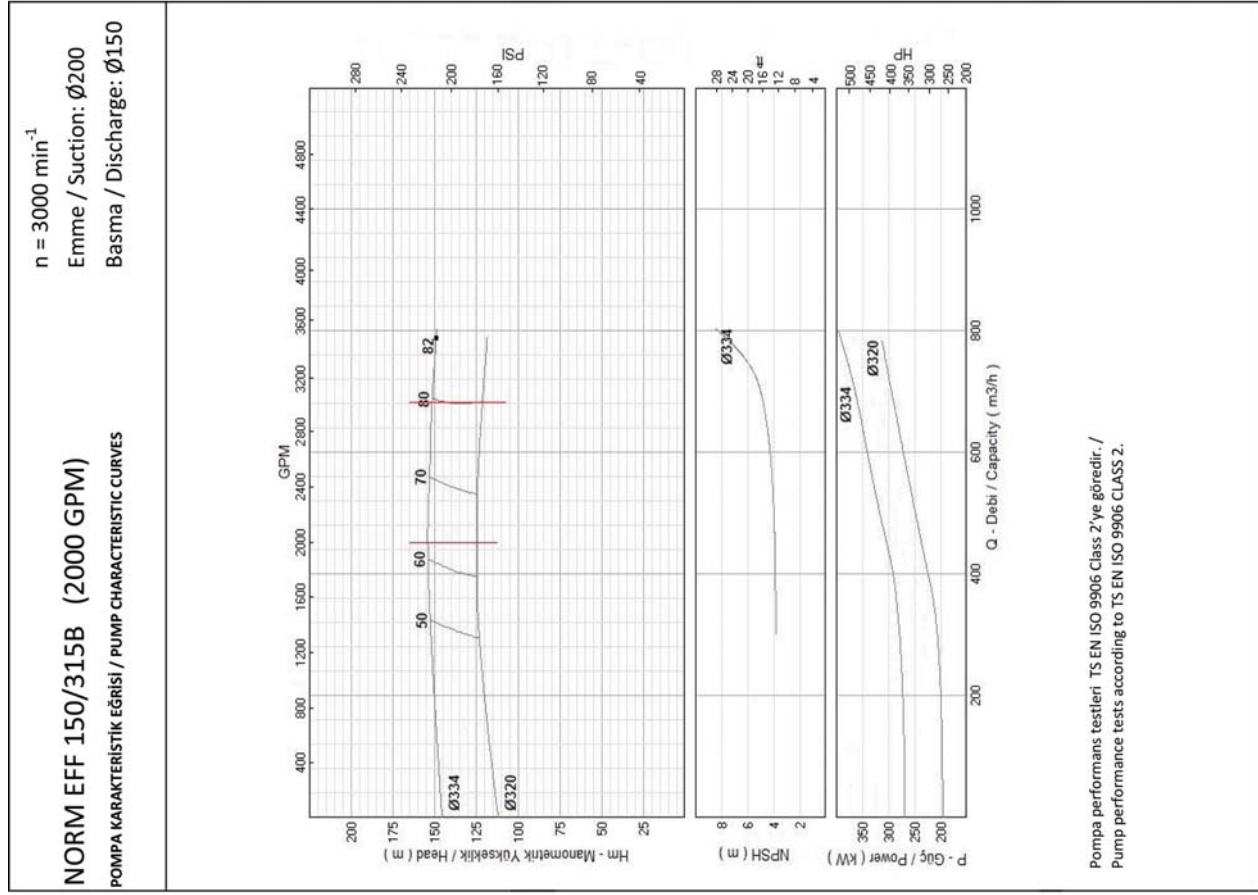
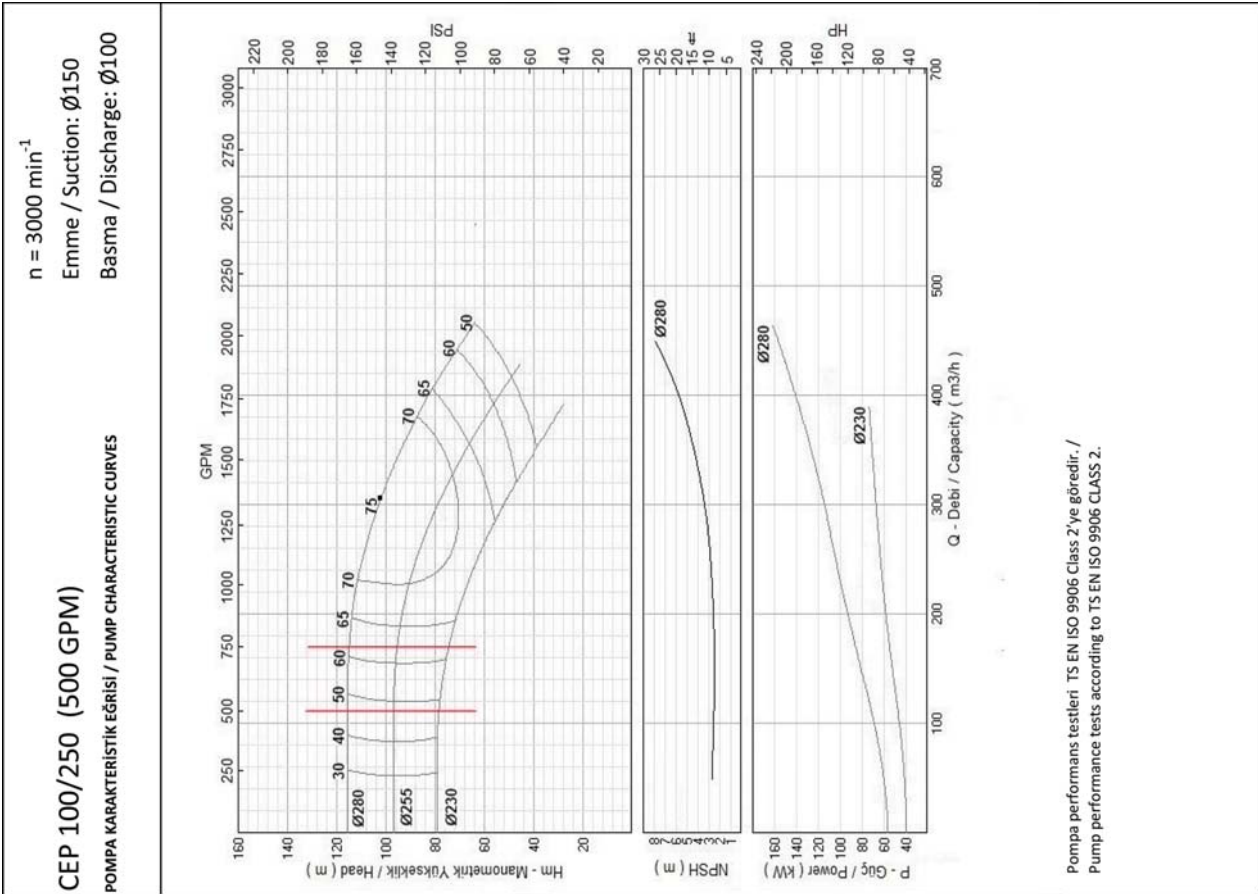
Basma / Discharge: $\varnothing 125$

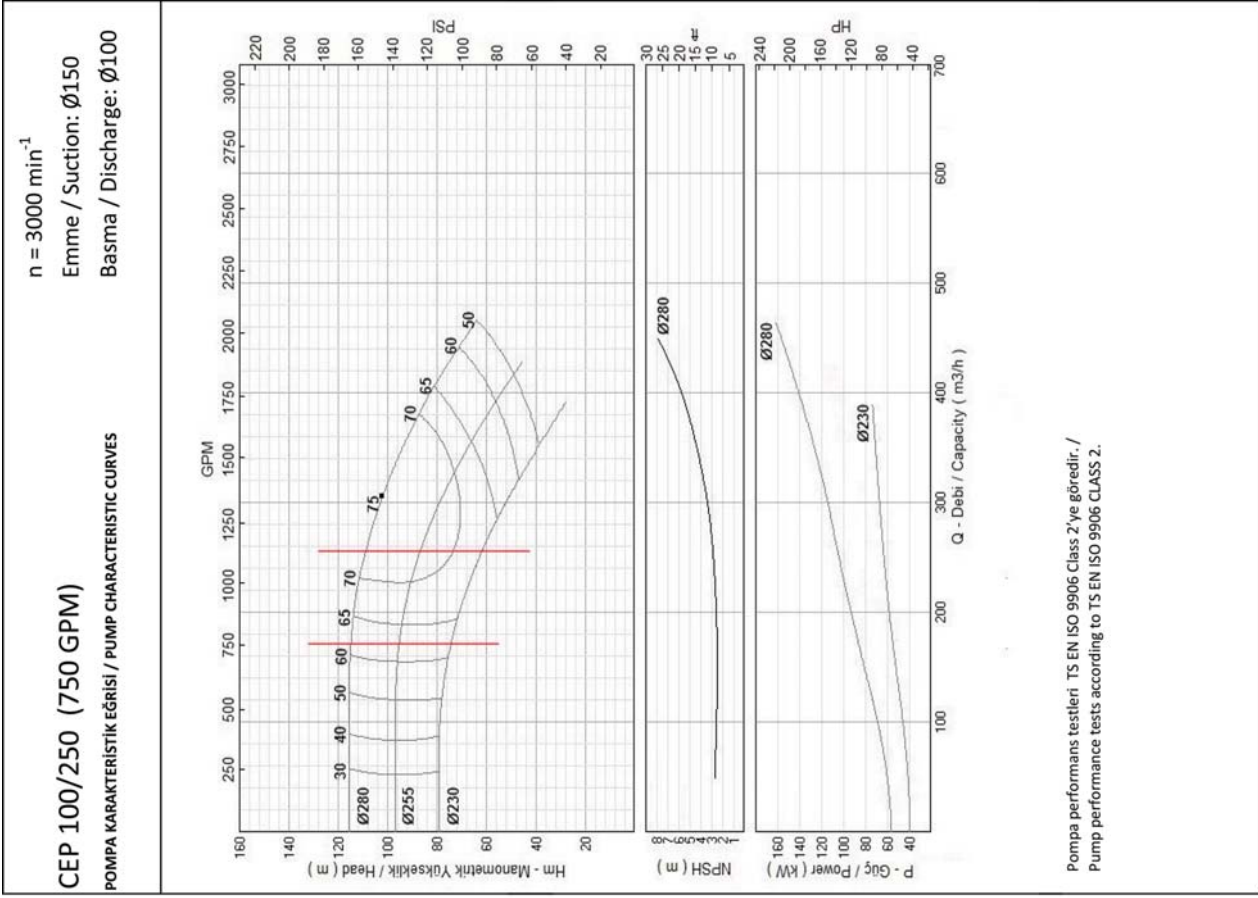
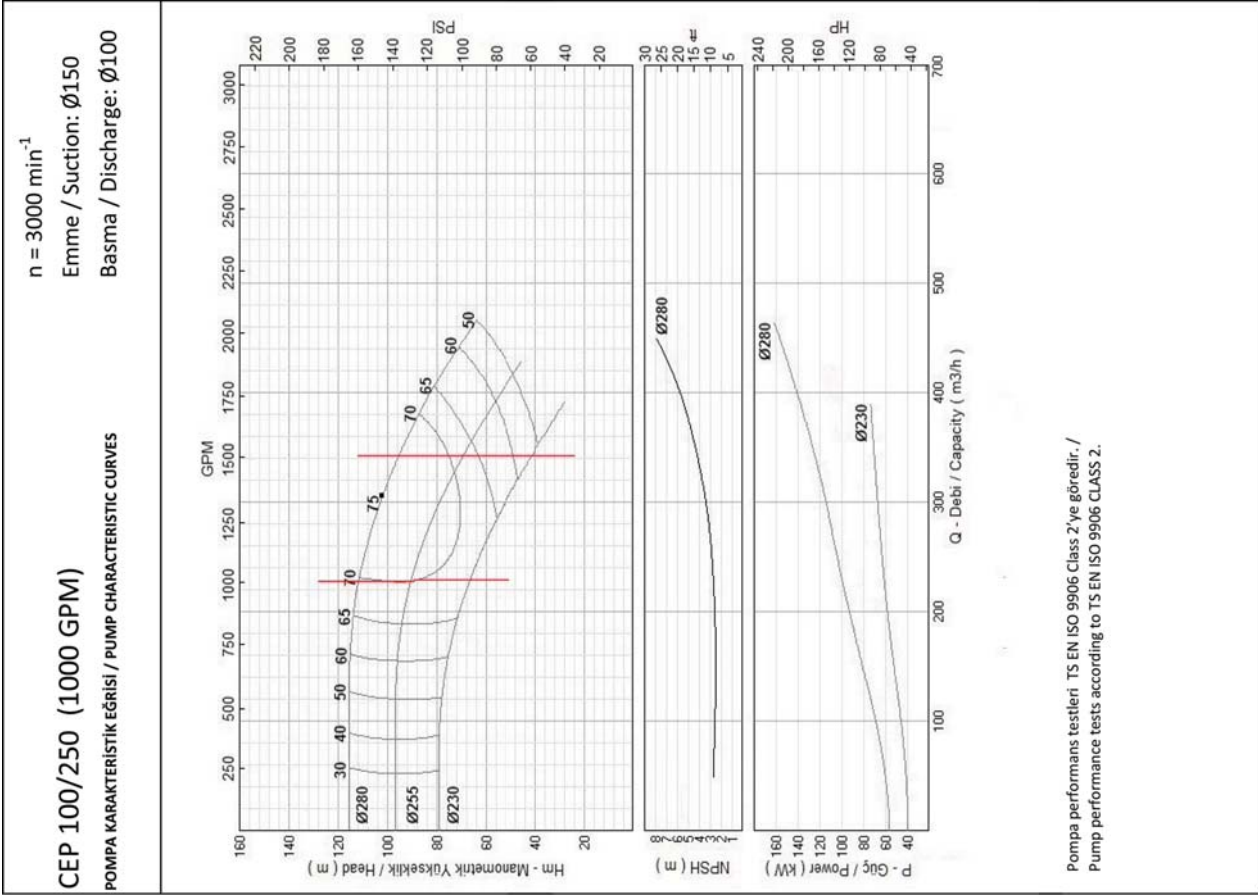
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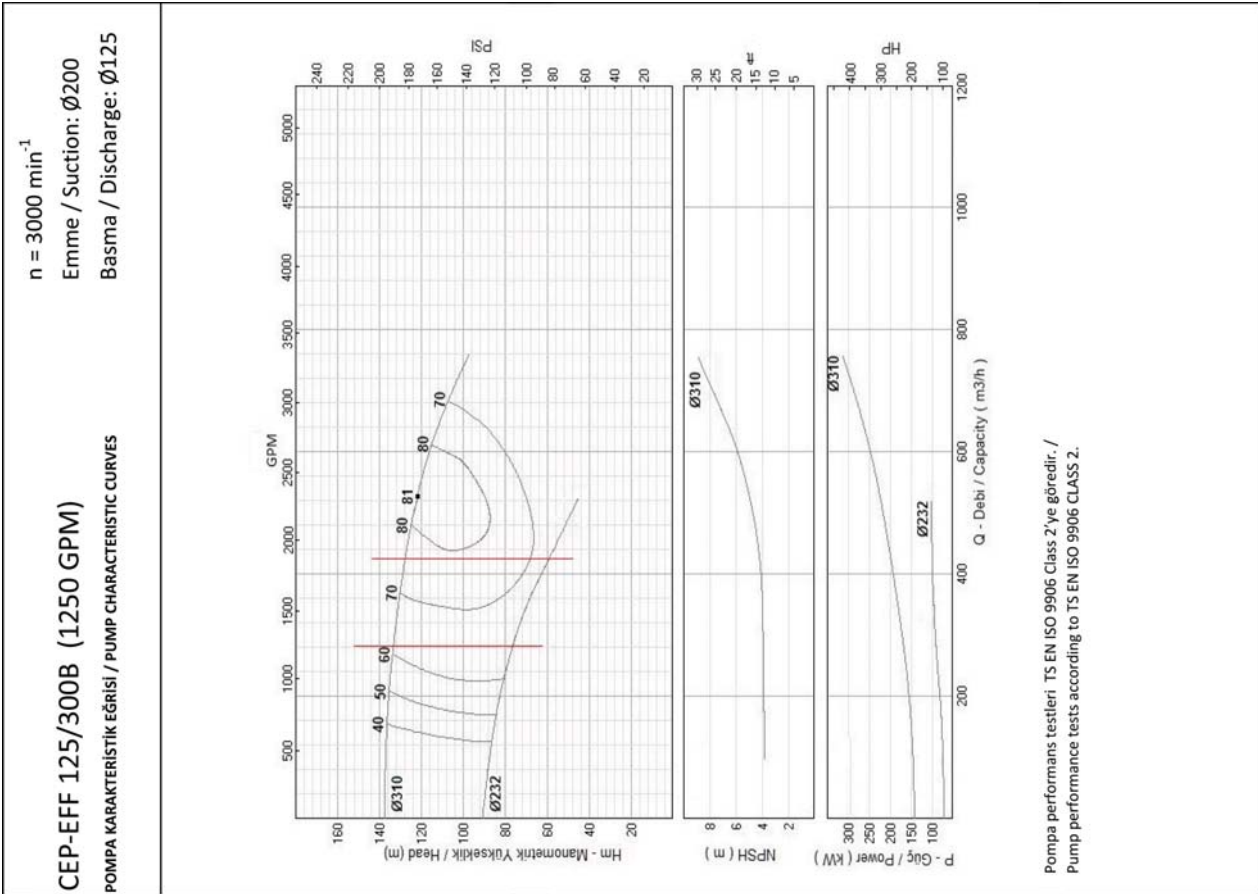
POMPA KARAKTERİSTİK EĞRİSİ / PUMP CHARACTERISTIC CURVES



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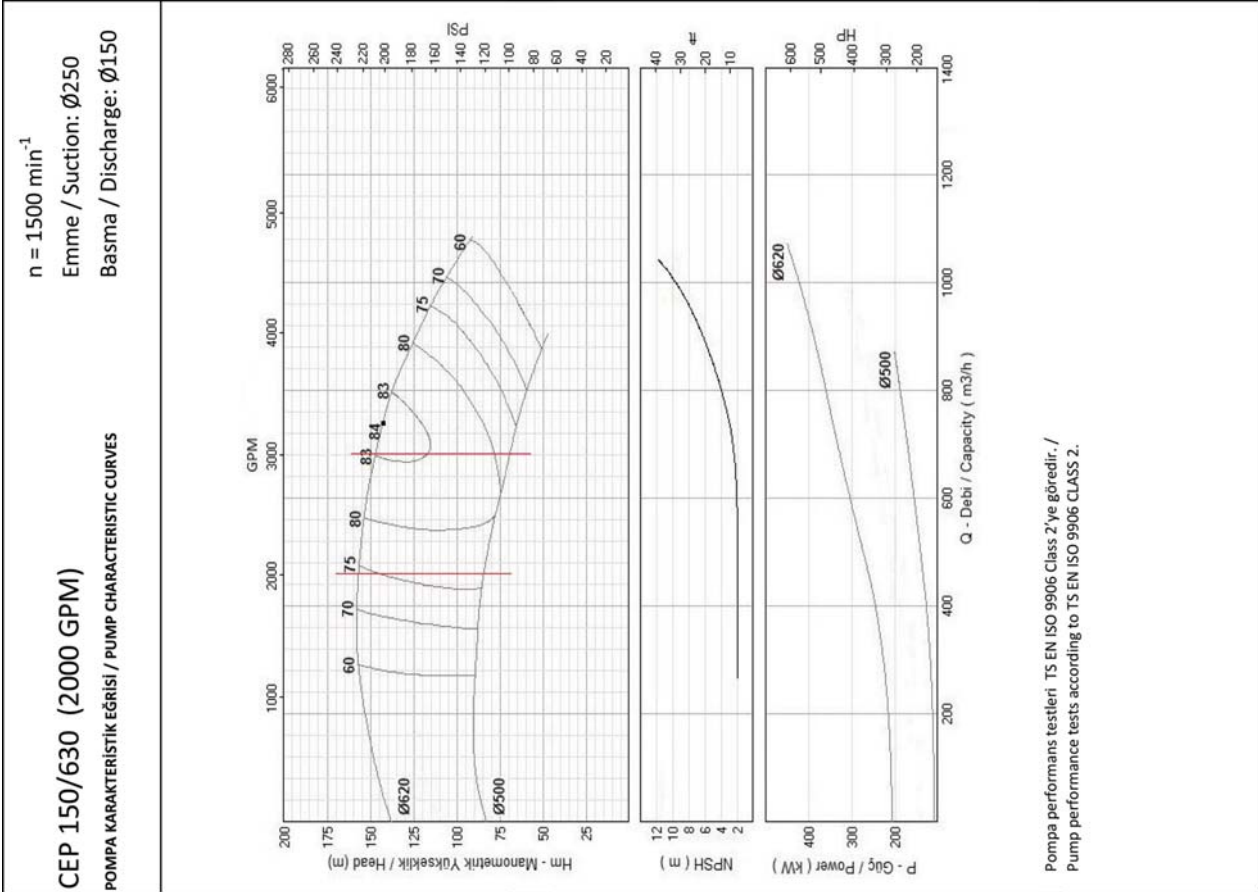
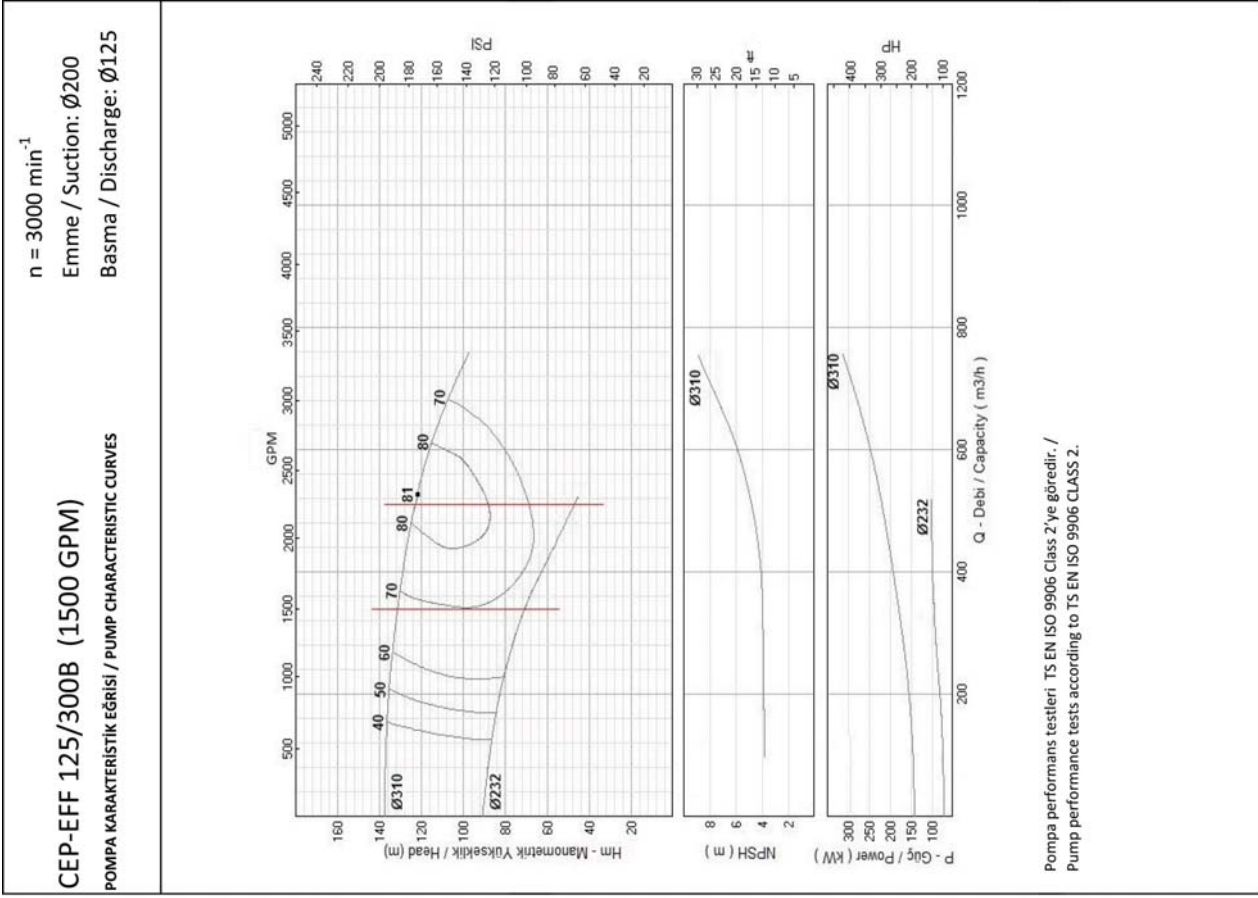


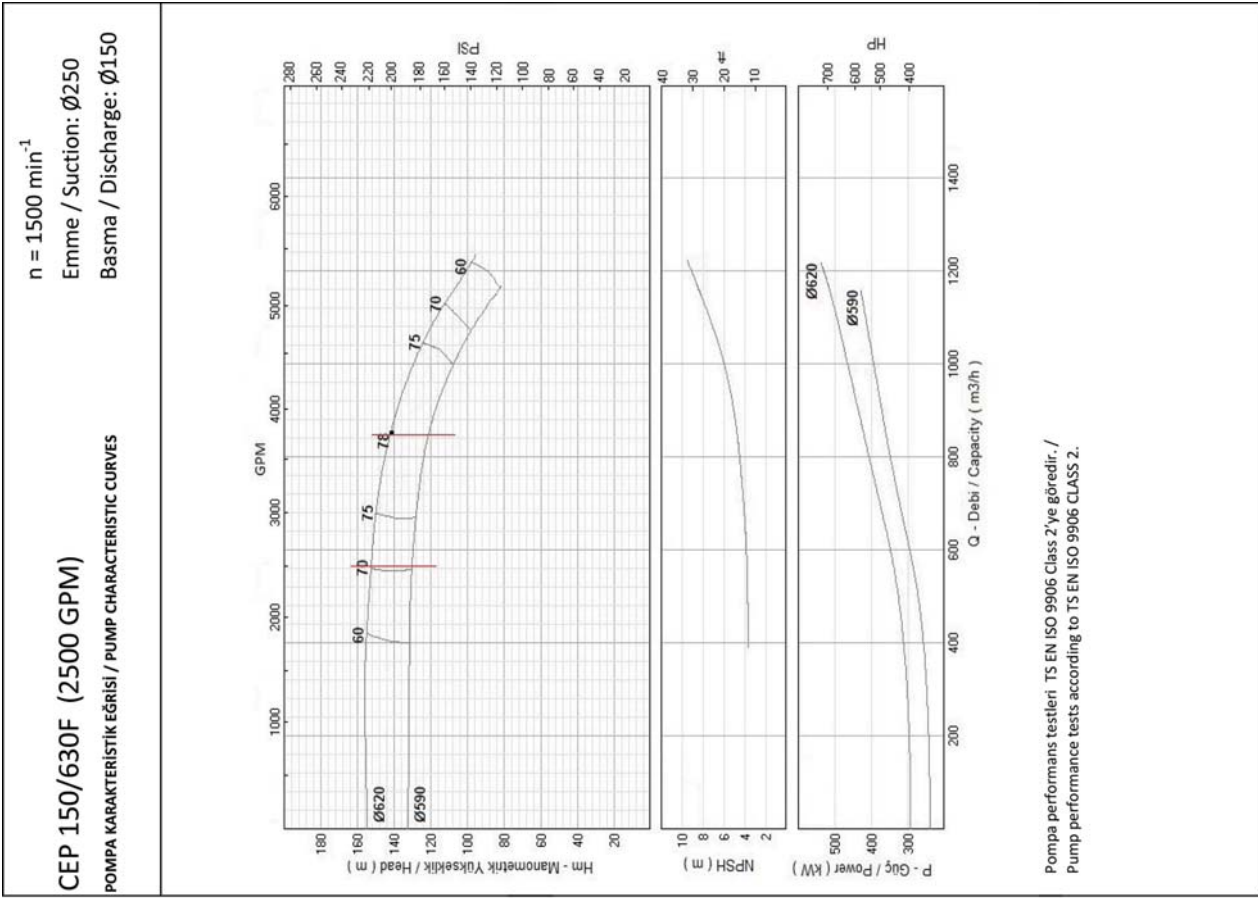
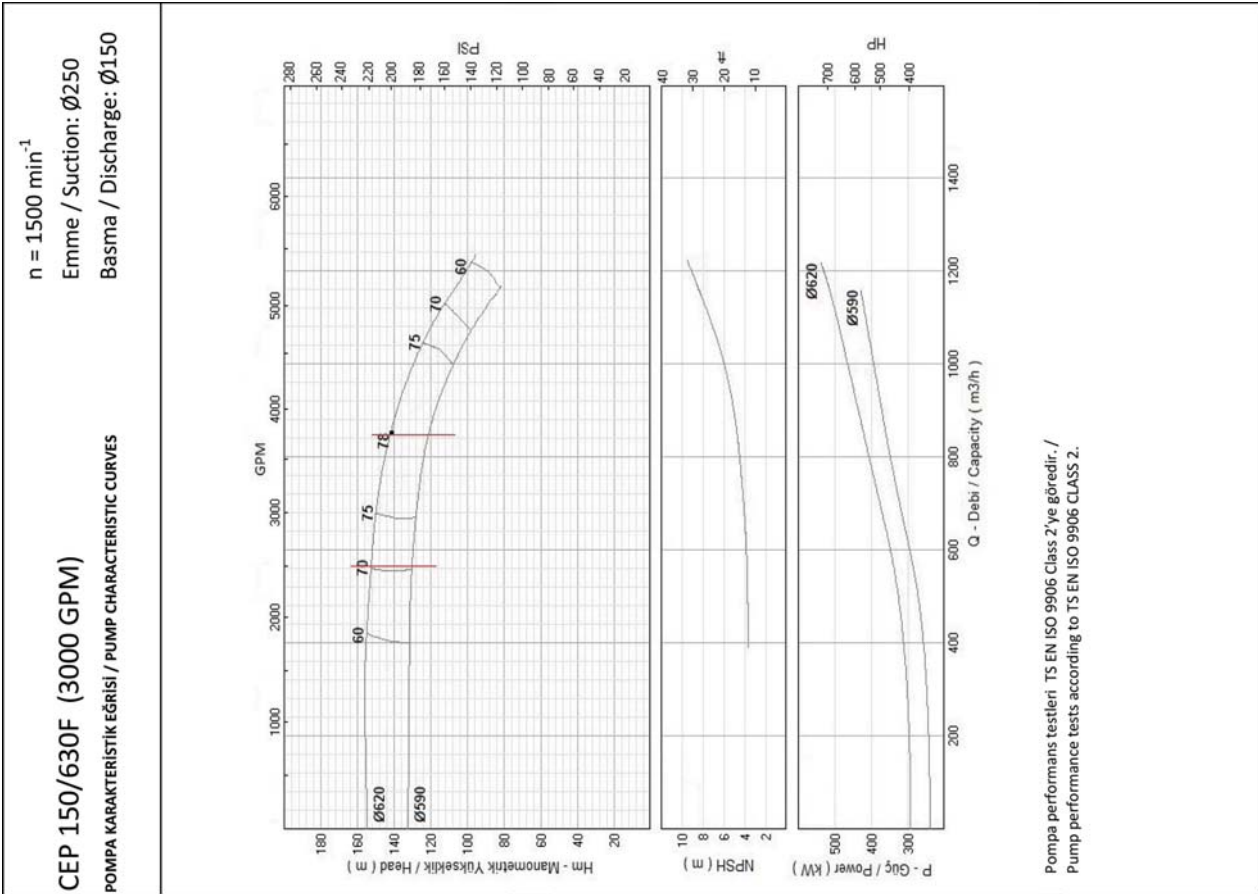




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Pompa performans testleri TS EN ISO 9906 Class 2'ye göre dir. /
 Pump performance tests according to TS EN ISO 9906 CLASS 2.



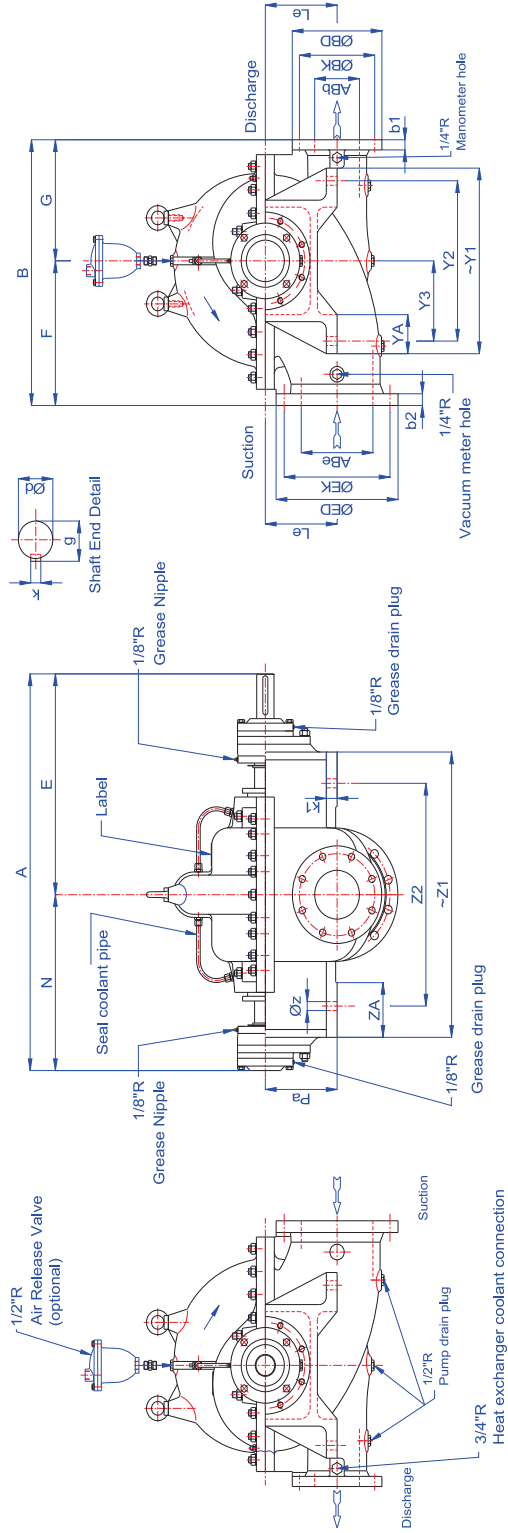


UL LISTED SPLIT CASE PUMPS FOR 3000 rpm					
CEP Pump Size	Rated Pressure	Maximum Pump power (Qx1,5)	Electric Motor Rated Power	Diesel Engine	Diesel Engine Rated Power
	(Hm) mwc	(kW)	(kW)	Model	(kW)
Rated capacity	500 GPM (114 m3/h)				
CEP 100/250 6" x 4"	80	59	75	JU4H-UF24	62
	90	66	75	JU4H-UF34	86
	100	74	75	JU4H-UF34	86
	110	83	90	JU4H-UF34	86
Rated capacity	750 GPM (170 m3/h)				
CEP 100/250 6" x 4"	75	65	75	JU4H-UF34	86
	80	70	75	JU4H-UF34	86
	90	79	90	JU4H-UF34	86
	100	89	90	JU4H-UF54	108
	110	101	110	JU4H-UF54	108
Rated capacity	1000 GPM (227m3/h)				
CEP 100/250 6" x 4"	70	74	75	JU4H-UF34	86
	80	85	90	JU4H-UF54	108
	90	96	110	JU4H-UF54	108
	100	108	110	JU4H-UF54	108
	110	122	132	JU6H-UF34	131
Rated capacity	1000 GPM (227m3/h)				
CEP EFF 125/300B 8" x 5"	80	100	110	JU4H-UF54	108
	90	112	110	JU6H-UF34	131
	100	125	132	JU6H-UF34	131
	110	142	160	JU6H-UF54	161
	120	161	160	JU6H-UF54	161
	130	172	200	JU6H-UF84	205
Rated capacity	1250 GPM (284 m3/h)				
CEP EFF 125/300B 8" x 5"	80	111	110	JU6H-UF34	131
	90	125	132	JU6H-UF34	131
	100	140	160	JU6H-UF54	161
	110	154	160	JU6H-UF54	161
	120	172	200	JU6H-UF84	205
	130	192	200	JU6H-UF84	205
Rated capacity	1500 GPM (341 m3/h)				
CEP EFF 125/300B 8" x 5"	71	107	110	JU4H-UF54	108
	80	128	132	JU6H-UF34	131
	90	143	160	JU6H-UF54	161
	100	155	160	JU6H-UF54	161
	110	175	200	JU6H-UF84	205
	125	200	200	JU6H-UF84	205
UL LISTED SPLIT CASE PUMPS FOR 1500 rpm					
Rated capacity	2000 GPM (454 m3/h)				
CEP 150/630 10" x 6"	90	174	200	DP6H-UFKAX8	179
	100	194	200	DQ6H-UFKA98	224
	110	217	250	DQ6H-UFKA98	224
	120	242	250	DR8H-UFKA40	287
	130	262	315	DR8H-UFKA40	287
	140	285	315	DR8H-UFKA40	287
	150	309	315	DR8H-UFKA5G	336
Rated capacity	2000 GPM (454 m3/h)				
CEP 150/630 F 10" x 6"	138	332	355	DR8H-UFKA5G	336
	140	335	355	DR8H-UFKA5G	336
	149	356	355	DS0H-UFKA68	389
Rated capacity	2500 GPM (568 m3/h)				
CEP 150/630 F 10" x 6"	136	384	400	DS0H-UFKA68	389
	140	392	400	DT2H-UFAA58	522
	148	409	400	DT2H-UFAA58	522
Rated capacity	3000 GPM (681 m3/h)				
CEP 150/630 F 10" x 6"	135	418	450	DT2H-UFAA58	522
	140	433	450	DT2H-UFAA58	522
	149	463	500	DT2H-UFAA58	522

UL LISTED END SUCTION PUMPS FOR 3000 rpm					
NORM Pump Size	Rated Pressure	Maximum Pump power (Qx1,5)	Electric Motor Rated Power	Diesel Engine Model	Diesel Engine Rated Power
	(Hm) mwc	(kW)	(kW)		(kW)
Rated capacity		50 GPM (11,4 m3/h)			
NORM SN 32/250 2" x 1 1/4"	72	9.1	11	KA4H-UFKA24	33.5
	80	10.3	11	KA4H-UFKA24	33.5
	85	11.2	15	KA4H-UFKA24	33.5
	90	12.1	15	KA4H-UFKA24	33.5
	95	13.1	15	KA4H-UFKA24	33.5
100	14.2	15	KA4H-UFKA24	33.5	
Rated capacity		100 GPM (22,7 m3/h)			
NORM SN 32/250 2" x 1 1/4"	72	12.8	15	KA4H-UFKA24	33.5
	80	14.7	15	KA4H-UFKA24	33.5
	85	15.4	18.5	KA4H-UFKA24	33.5
	90	16.5	18.5	KA4H-UFKA24	33.5
	95	17	18.5	KA4H-UFKA24	33.5
98	17.8	18.5	KA4H-UFKA24	33.5	
Rated capacity		150 GPM (34,1 m3/h)			
NORM SN 32/250 2" x 1 1/4"	70	16.1	18.5	KA4H-UFKA24	33.5
	75	17.5	18.5	KA4H-UFKA24	33.5
	80	18.4	18.5	KA4H-UFKA24	33.5
	85	20.1	22	KA4H-UFKA24	33.5
	90	21.5	22	KA4H-UFKA24	33.5
96	23.2	30	KA4H-UFKA24	33.5	
Rated capacity		200 GPM (45,4 m3/h)			
HD-NORM 50/250 3" x 2"	70	22.8	30	KA4H-UFKA24	33.5
	80	24.7	30	KA4H-UFKA24	33.5
	90	27	30	KA4H-UFKA24	33.5
	95	28.3	30	KA4H-UFKA24	33.5
Rated capacity		250 GPM (56,8 m3/h)			
HD-NORM 50/250 3" x 2"	70	27	30	KA4H-UFKA24	33.5
	80	29	30	KA4H-UFKA24	33.5
	90	32	37	KA4H-UFKA24	33.5
	93	33.1	37	KA4H-UFKA24	33.5
Rated capacity		300 GPM (68,1 m3/h)			
HD-NORM 65/250 4" x 2 1/2"	65	31.1	37	KA4H-UFKA24	33.5
	70	33	37	KA4H-UFKA24	33.5
	80	38.2	45	JU4H-UF04	45
	90	44	45	JU4H-UF04	45
	95	47.1	55	JU4H-UF14	53
Rated capacity		400 GPM (91 m3/h)			
HD-NORM 65/250 4" x 2 1/2"	65	36.1	37	JU4H-UF04	45
	70	38.2	45	JU4H-UF04	45
	80	44.3	45	JU4H-UF04	45
	90	50.8	55	JU4H-UF14	53
	95	54.1	55	JU4H-UF24	62
Rated capacity		450 GPM (102 m3/h)			
HD-NORM 65/250 4" x 2 1/2"	65	38.1	45	JU4H-UF04	45
	70	40.5	45	JU4H-UF04	45
	80	46.8	55	JU4H-UF14	53
	90	53	55	JU4H-UF14	53
Rated capacity		450 GPM (102 m3/h)			
HD-NORM 80/250 5" x 3"	72	39.3	45	JU4H-UF04	45
	80	43.6	45	JU4H-UF04	45
	90	51	55	JU4H-UF14	53
	100	57.8	75	JU4H-UF24	62
Rated capacity		500 GPM (114 m3/h)			
HD-NORM 80/250 5" x 3"	70	41.2	45	JU4H-UF04	45
	80	46.7	45	JU4H-UF14	53
	90	53.1	55	JU4H-UF14	53
	100	60.7	75	JU4H-UF24	62
	Rated capacity		500 GPM (114 m3/h)		
NORM 80/315 4" x 3"	107	62	75	JU4H-UF24	62
	110	63.5	75	JU4H-UF34	86
	115	66	75	JU4H-UF34	86
	120	71	75	JU4H-UF34	86
	125	74	75	JU4H-UF34	86
	130	75.4	75	JU4H-UF34	86
	140	83	90	JU4H-UF34	86
	150	90	90	JU4H-UF54	108
	155	94	110	JU4H-UF54	108
	160	99	110	JU4H-UF54	108

UL LISTED END SUCTION PUMPS FOR 3000 rpm					
NORM Pump Size	Rated Pressure	Maximum Pump power (Qx1,5)	Electric Motor Rated Power	Diesel Engine Model	Diesel Engine Rated Power
	(Hm) mwc	(kW)	(kW)		(kW)
Rated capacity		500 GPM (114 m3/h)			
NORM 100/315 5" x 4"	102	60	75	JU4H-UF24	62
	110	66	75	JU4H-UF34	86
	120	72	75	JU4H-UF34	86
	125	75.4	75	JU4H-UF34	86
	130	79	90	JU4H-UF34	86
	140	86	90	JU4H-UF34	86
	149	94	110	JU4H-UF54	108
Rated capacity		750 GPM (170 m3/h)			
NORM SN 100/250 5" x 4"	56	45	45	JU4H-UF04	45
	65	55	55	JU4H-UF24	62
	70	59	75	JU4H-UF24	62
	80	69	75	JU4H-UF34	86
	90	79.4	90	JU4H-UF34	86
	99	88.5	90	JU4H-UF54	108
Rated capacity		750 GPM (170 m3/h)			
NORM 100/315 5" x 4"	100	80	90	JU4H-UF34	86
	110	88	90	JU4H-UF54	108
	120	96	110	JU4H-UF54	108
	130	104.2	110	JU4H-UF54	108
	140	114	132	JU6H-UF34	131
	147	121	132	JU6H-UF34	131
	Rated capacity		750 GPM (170 m3/h)		
HD NORM 100/315 6" x 4"	132	116	132	JU6H-UF34	131
	140	123	132	JU6H-UF34	131
	150	131	132	JU6H-UF34	131
Rated capacity		750 GPM (170 m3/h)			
HD-NORM 125/315 6" x 5"	100	92	110	JU4H-UF54	108
	110	101.3	110	JU4H-UF54	108
	120	112	132	JU6H-UF34	131
	130	123.4	132	JU6H-UF34	131
	140	134.1	160	JU6H-UF54	161
	150	147.1	160	JU6H-UF54	161
Rated capacity		1000 GPM (227 m3/h)			
NORM SN 100/250 5" x 4"	50	49.2	55	JU4H-UF14	53
	65	64.4	75	JU4H-UF34	86
	70	69	75	JU4H-UF34	86
	80	80	90	JU4H-UF34	86
	90	92	90	JU4H-UF54	108
	98	103	110	JU4H-UF54	108
Rated capacity		1000 GPM (227 m3/h)			
HD NORM 100/315 6" x 4"	125	134	160	JU6H-UF54	161
	130	139	160	JU6H-UF54	161
	140	151	160	JU6H-UF54	161
	149	160.6	160	JU6H-UF54	161
Rated capacity		1250 GPM (284 m3/h)			
HD NORM 125/315B 8" x 5"	111	164	160	JU6H-UF84	205
	120	179	200	JU6H-UF84	205
	130	196	200	JU6H-UF84	205
	140	209	250		
	150	226	250		
Rated capacity		1250 GPM (284 m3/h)			
NORM 150/315 8" x 6"	86	117.5	132	JU6H-UF34	131
	90	124	132	JU6H-UF34	131
	100	140.1	160	JU6H-UF54	161
	110	159	160	JU6H-UF54	161
	120	177.2	200	JU6H-UF84	205
	130	195	200	JU6H-UF84	205
	140	214	250		
Rated capacity		1500 GPM (341 m3/h)			
HD NORM 125/315B 8" x 5"	110	180	200	JU6H-UF84	205
	120	198	200	JU6H-UF84	205
	130	218	250		
	140	235	250		
	150	256	250		
Rated capacity		1500 GPM (341 m3/h)			
NORM EFF 150/315B 8" x 6"	130	264	315		
	140	288	315		
	150	314	315		
Rated capacity		2000 GPM (454 m3/h)			
NORM EFF 150/315B 8" x 6"	130	296	315		
	140	317	315		
	150	345	355		

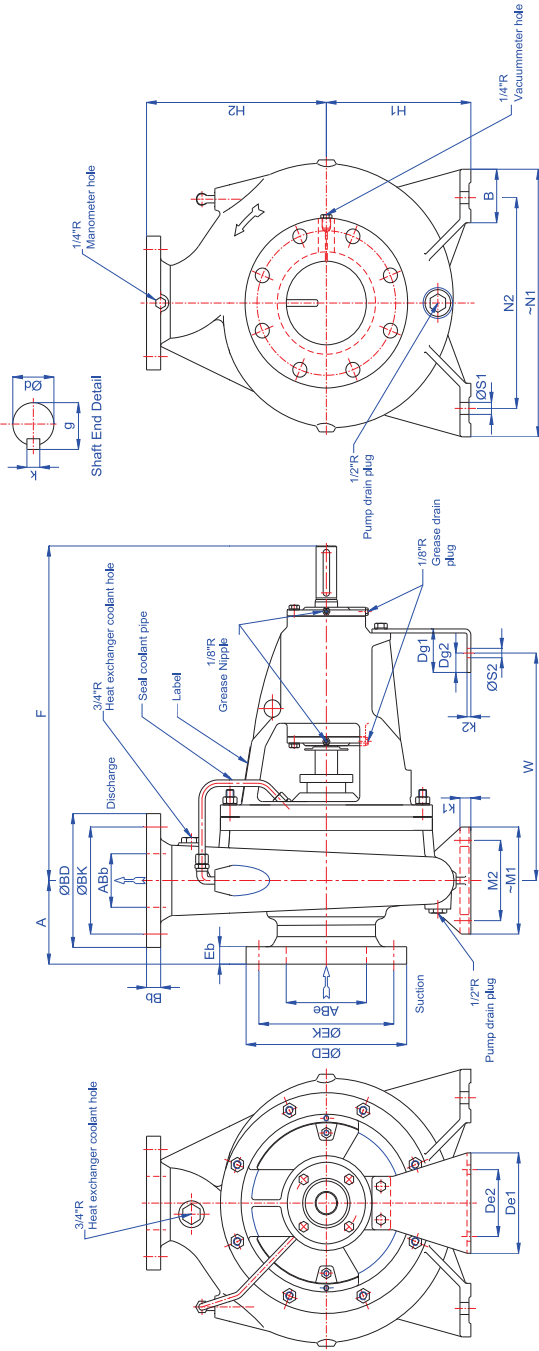
UL LISTED CEP PUMPS DIMENSION TABLE



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	Hole Piece x Ø	b1	ØED	ØEK	Hole Piece x Ø	b2	Ød	k	g
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	8xØ22	26	342.9	298.45	8xØ22	30	42	12	45
CEP-EFF 125/300B	125	200	450	565	1015	370	310	680	200	200	730	570	140	475	410	205	100	30	23	279.4	234.95	8xØ22	26	342.9	298.45	8xØ22	30	48	14	51.5
CEP 150/630	150	250	555	705	1260	600	450	1050	245	350	864	710	170	500	420	210	115	35	28	318	270	12xØ22	37	406.4	362	12xØ26	30	62	18	66
CEP 150/630F	150	250	555	705	1260	600	450	1050	245	350	864	710	170	500	420	210	115	35	28	318	270	12xØ22	37	406.4	362	12xØ26	30	62	18	66

NOTE: Suction flange of Cep 100/250, Cep-EFF 125/300B pumps are according to ANSI/ASME 16.1 Class 125 , discharge flange are according to ANSI/ASME 16.1 Class 250.
Suction flange of Cep 150/630, Cep 150/630F pumps are according to ANSI/ASME 16.1 Class 150 , discharge flange is according to ANSI/ASME 16.1 Class 300.

UL LISTED NORM PUMPS DIMENSIONS TABLE



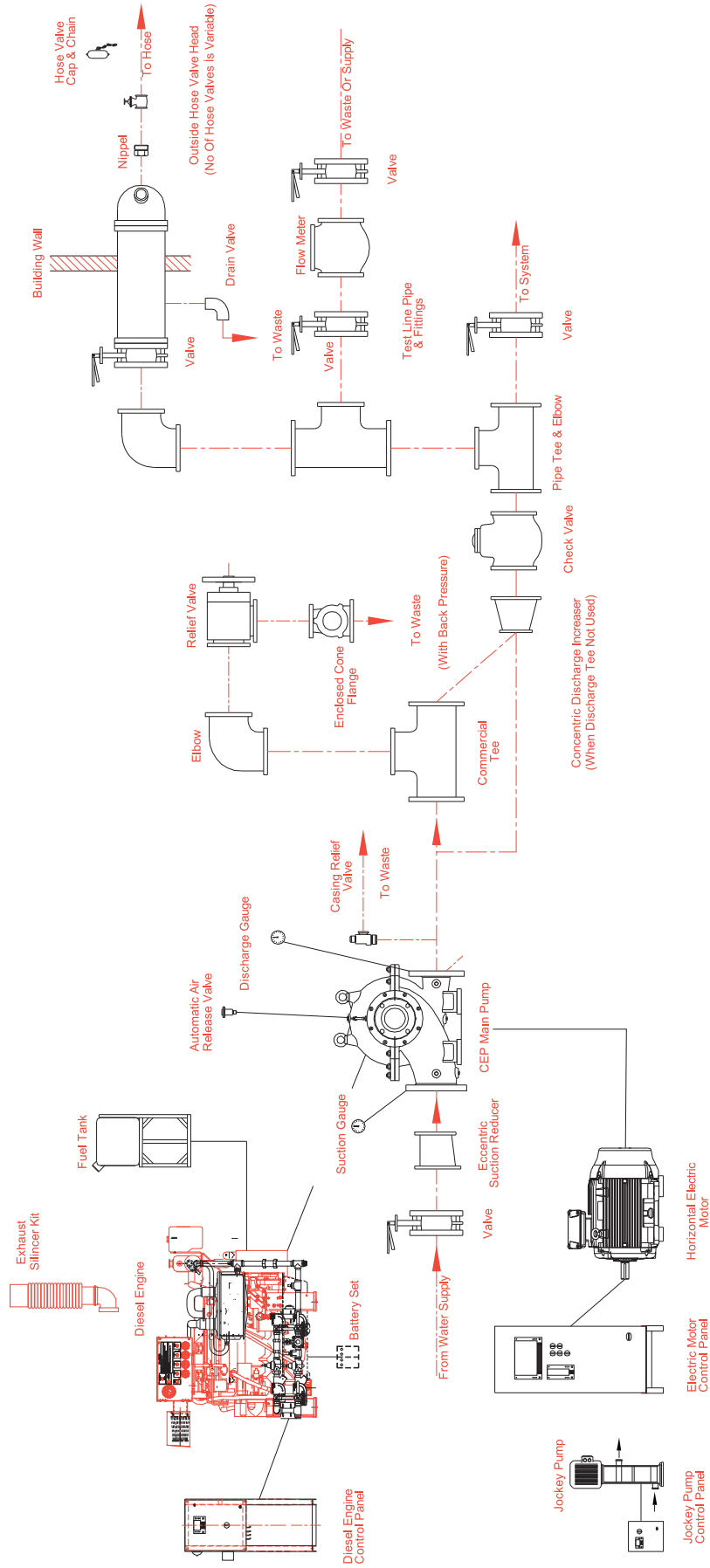
PUMP MODEL	Discharge Flange										Suction Flange				Shaft End																											
	Abb	Abe	A	F	H1	H2	M1	M2	N1	N2	k1	ØS1	De1	De2	Dg1	Dg2	k2	ØS2	ØBD	ØBK	Hole x Ø	Piece	Bb	ØED	ØEK	Hole x Ø	Piece	Eb	Ød	k	Ø	Ø	Ø									
NORM SN 32/250	32	50	100	470	180	225	125	95	320	250	18	12	130	100	65	29	6	14	117	89	4xØ16	13	152.4	120	4xØ20	16	32	10	35													
HD-NORM 50/250	80	50	125	360	180	225	125	95	320	250	18	14	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	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	18	150	100	65	35	6	14	190.5	152.4	4xØ20	22	254	215.9	8xØ20	24	32	10	35													
NORM 80/315	80	100	125	525	250	315	160	120	400	315	19	18	150	100	65	29	6	14	210	168.5	8xØ22	29	228.6	190.5	8xØ20	24	42	12	45													
NORM SN 100/250	100	125	140	530	225	280	160	120	400	315	20	18	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	18	150	100	65	29	6	14	254	200	8xØ22	32	255	216	8xØ22	24	38	10	41													
HD NORM 100/315	100	150	140	530	250	315	160	120	400	315	18	18	150	100	65	29	6	14	254	200	8xØ22	32	279.4	241.3	8xØ22	25	38	10	41													
HD-NORM 125/315	125	150	140	580	280	355	200	150	500	400	24	23	150	100	65	29	6	14	279.4	235	8xØ22	35	279.4	241.3	8xØ22	25	48	14	51.5													
HD-NORM 125/315B	125	200	160	580	280	355	200	150	500	400	24	23	150	100	65	29	6	14	279.4	235	8xØ22	35	343	298.5	8xØ22	26	48	14	51.5													
NORM 150/315	150	200	160	580	280	400	200	150	550	450	24	23	150	100	65	29	6	14	317.5	270	12xØ22	37	343	298.5	8xØ22	26	48	14	51.5													
NORM EFF 150/315B	150	215	160	595	315	400	200	150	550	450	24	23	200	150	85	42	8	23	317.5	270	12xØ22	37	343	298.5	8xØ22	26	48	14	51.5													

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.

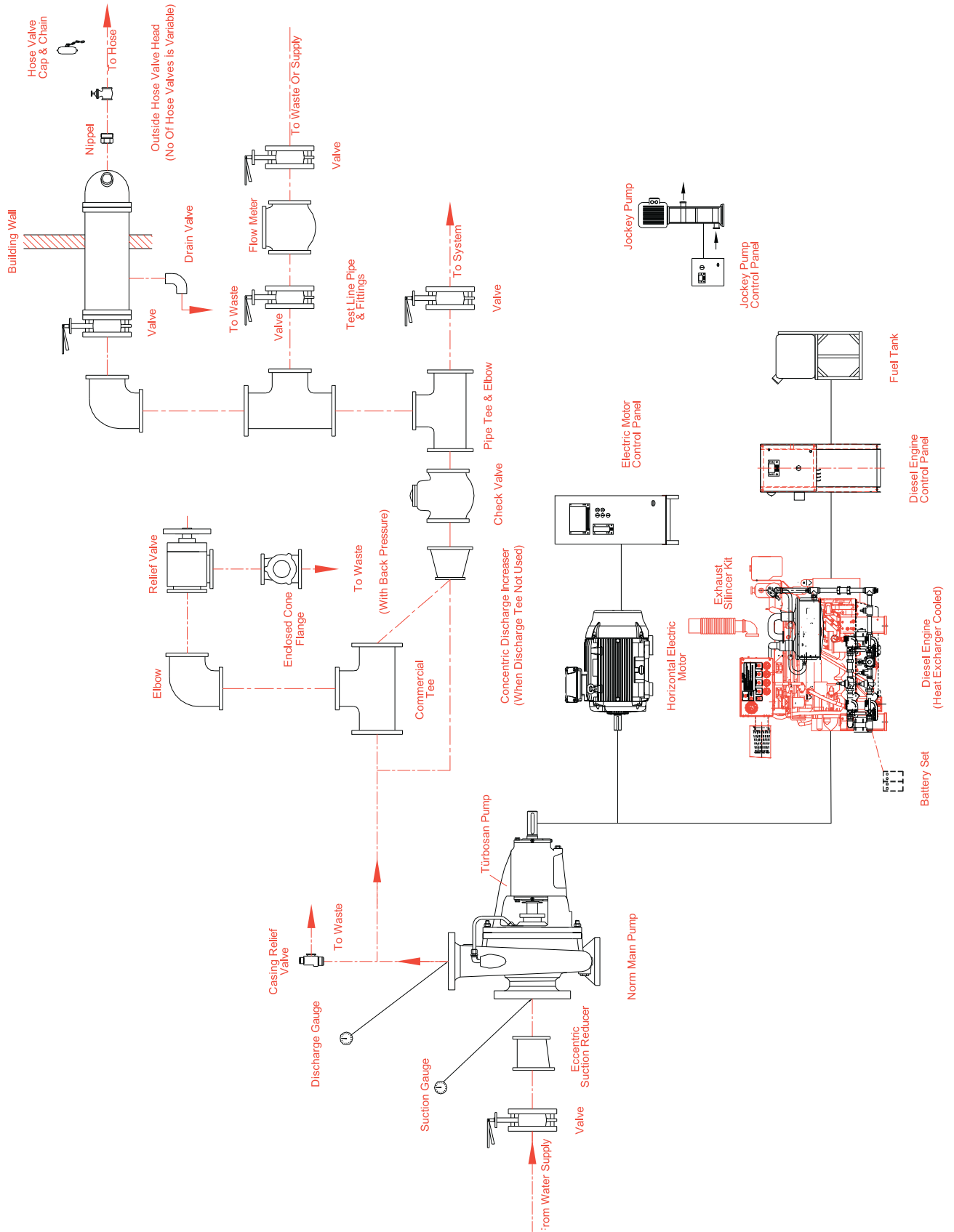
Suction and Discharge flanges of NORM SN 32/250, NORM SN 100/250 pumps are according to ANSI/ASME 16.1 Class 150.

Suction flanges of NORM 80/315, NORM 100/315, HD-NORM 100/315, HD-NORM 125/315, HD-NORM 125/315B, NORM 150/315, NORM EFF 150/315 pumps are according to ANSI/ASME 16.1 Class 150 and Discharge flanges are according to ANSI/ASME 16.1 Class 300.

CEP Split Case Fire Fighting Pump System Accessories



* Norm End Suction Fire Fighting Pump System Accessories



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PRODUCTION PROGRAM

- ✓ End suction pumps
- ✓ Double suction pumps
- ✓ Multistage pumps
- ✓ Vertical, axial and mixed flow pumps
- ✓ Sewage pumps
- ✓ Submersible pumps with grinder blade
- ✓ Submersible sewage pumps
- ✓ Submersible axial and mixed flow pumps
- ✓ Chemical process pumps
- ✓ API610 process pumps
- ✓ Fire fighting sets (UL Listed)
- ✓ NORM-HP hot water pumps





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