



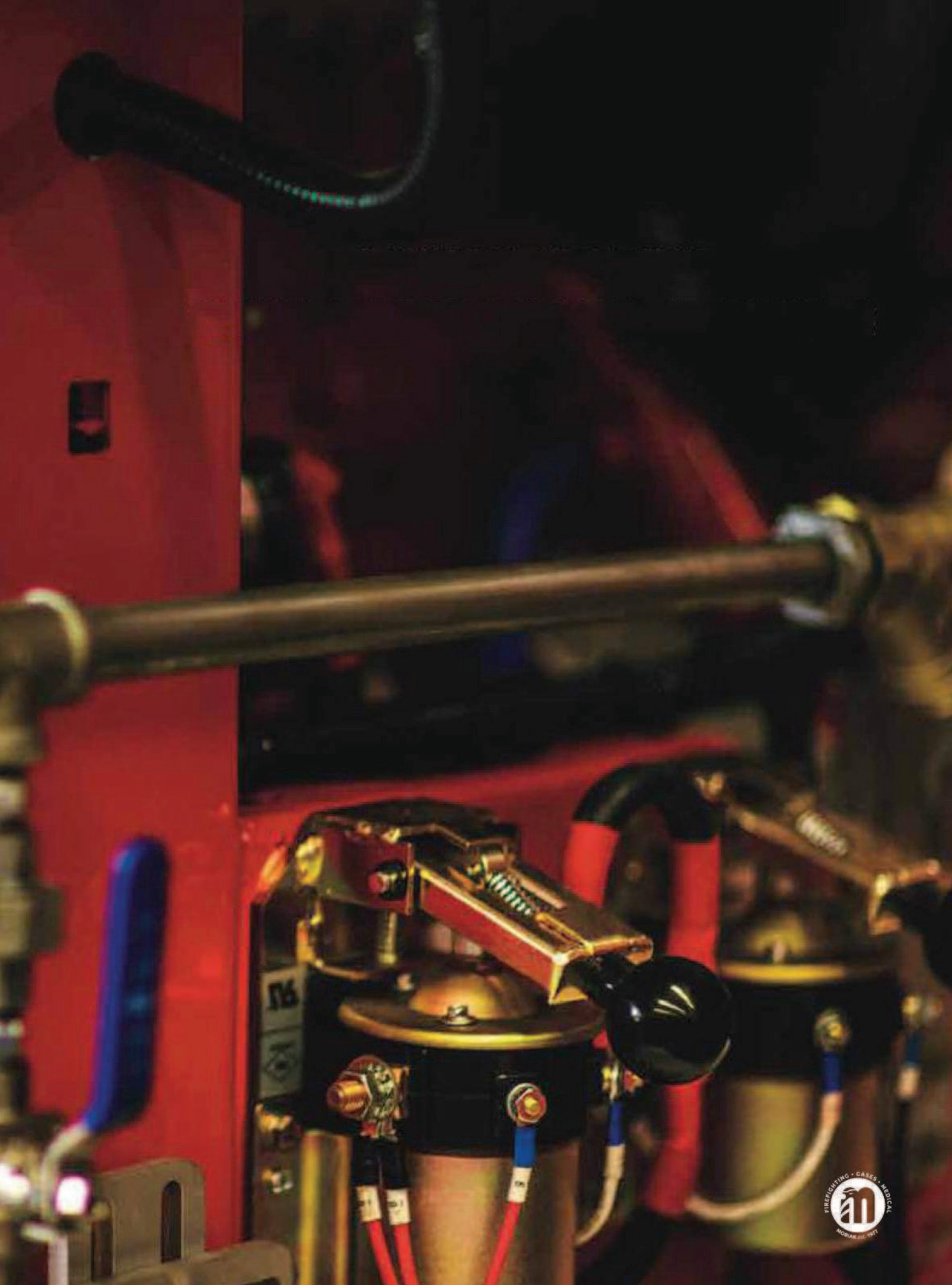
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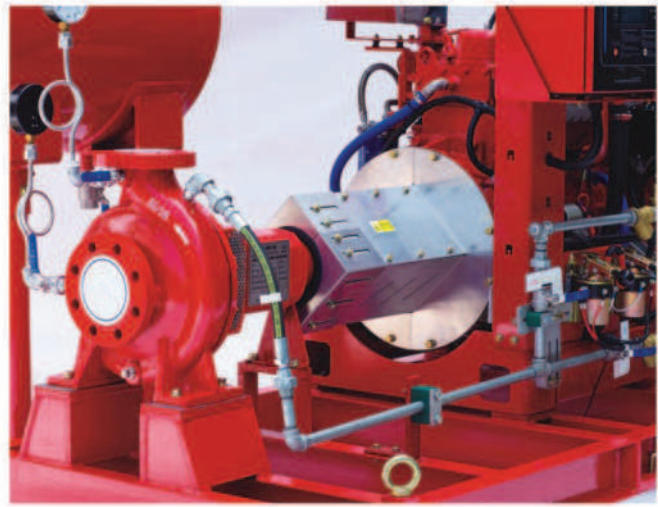
CENTRIFUGAL FIRE PUMP END SUCTION

Pump / Engine / Motor / Controller / Accessories





PRODUCT TYPES



Electric Motor Driven Pump Set
Diesel Engine Driven Pump Set
Containerised Pump Set
NFPA20 Package

CERTIFICATE OF COMPLIANCE

Certificate Number 20190307-EX28001
Report Reference EX28001-20190301
Issue Date 2019-MARCH-07

Issued to: MOBIAK S.A
96-98 MARKOU BOTSARI STR,
CHANIA CRETE, 73136,
Greece

This certificate confirms that representative samples of CENTRIFUGAL FIRE PUMPS, END SUCTION
See Addendum page for Models/Product

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

Standard(s) for Safety: UL 448 - Standard for Pumps for Fire-Protection Service

Additional Information: See the UL Online Certifications Directory at <https://iq.ulprospector.com> for additional information.

This *Certificate of Compliance* does not provide authorization to apply the UL Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.

Barthel

Bruce Mahrenholz, Director North American Certification Program
UL LLC

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FIRE PUMP APPLICATION

Fire Pumps are used to supply water for automatic sprinkler systems, standpipes or fire hydrants. NFPA No. 20 classifies fire pumps as split case, vertical turbine, end suction, or In-Line design. In-Line fire pumps have capacities of 50, 75, 100, 150, 200, 250, 300, 400, 450, 500, and 750 GPM; End Suction pumps are rated for 100, 200, 250, 300, 400, 450, 500, and 750 GPM; Split case and vertical turbine fire pumps are rated 150, 200, 300, 450, 500, 750, 1000, 1250, 1500, 2000, 3000, 3500, 4000, 4500, and 5000 GPM. All fire pumps are rated at 40 pounds per square inch or more of boost.

Fire Pumps of the type described shall meet the following basic requirements:

1. Each pump is to be tested hydrostatically for not less than 5 minutes. The test pressure is to be not less than 1.5 times the maximum working pressure of the pump, but in no case less than 250 psi (1724 kPa).

2. A pump shall develop not less than 65 percent of rated total head when discharging at 1.5 times rated capacity. The maximum net pressure for a fire pump shall not exceed 140 percent of rated head.

3. The maximum pump brake horsepower shall not exceed the HP rating its driver, including service factor.

DRIVERS

Fire Pumps are driven by either electric motors, diesel engine, or steam turbines. The basic standards for drivers are as follows:

MOTORS : NFPA 20 requires all fire pump motor drives to be rated for continuous duty and shall not be used at voltages in excess of 110% of rated voltage. At rated voltage and frequency, the full load ampere rating shall not be exceeded (except as allowed by the service factor on motor nameplate) under any pumping condition.

ENGINES : NFPA 20 requires that the engine shall have HP rating listed by a testing laboratories, (UL/FM) or be not less than 10% greater than the maximum brake HP required by the pump. A deduction of 3% of the power shall be made for each 1000 feet rise in altitude above 300 ft. and 1% for each 10 degrees F. Above 77 degrees F. Ambient temp. Minimum instrumentation and control shall include: adjustable speed governor, over speed shutdown device set approx. 20% above rated engine speed, tachometer with hour meter, oil pressure gauge and temperature gauge.

CONTROLLERS

Listed below are NFPA 20 minimum requirements for fire pump controls:

MOTOR CONTROLLERS : The motor control panel equipment shall be factory assembled, wired, tested, and specifically approved for fire pump service. Combined manual and automatic type to incorporate the following:

- a. Isolating switch
- b. Externally operable, quick breaking disconnect
- c. Time delay Locked Rotor Over current protection set at 600% of motor full load current for 20 seconds
- d. Pressure switch with high and low pressure setting
- e. Motor Starter of the magnetic type
- f. Pilot lamp to indicate circuit breaker closed and power available
- g. Phase Reversal visible indicator pilot lamp

ENGINE CONTROLLERS: Automatic engine controllers shall be assembled, wired assembled at the factory and specifically approved for fire pump service. The following minimum features shall be incorporated:

- a. Pilot lamps to indicate controller in automatic position
- b. Alarm bell and pilot lamp to indicate low oil pressure, high jacket water temp, failure to start, shutdown for over speed,

- battery failure and battery charger failure
- c. Pressure recorder
- d. Battery charger
- e. Pressure switch with high and low settings
- f. Weekly Test Timer

Most control panels now supplied are manual stop.

Automatic shutdown upon cancellation of all start signals can be supplied as an option.

Engine controllers are supplied with as standard, equipment contacts to operate auxiliary equipment such as remote alarms, louvers etc.

JOCKEY PUMPS

Jockey Pumps are used when it is desirable to maintain a uniform pressure on the fire system. Normally they are supplied at a capacity of 1% main pump and at a pressure slightly above design pressure. A centrifugal type is preferred, but a turbine vane pump or a positive displacement pump can be used. Where these latter types are used, a suitable relief valve shall be installed to prevent damage to the fire system.

FIRE END SUCTION PUMP STANDARD CONSTRUCTION

ROTATION : Rotation is clockwise when viewed from the driver end

VOLUTE : The back pull out design of the volute allows the removal of the motor and integral pumping element without disturbing the piping or pump mounting. The suction and discharge flanges are 250 lb. Rated

IMPELLER AND WEAR RINGS : Closed type impellers are precision cast, carefully machined, statically and dynamically balanced. The impeller is keyed to the pump shaft and retained with a cap screw and washer. Balance holes on the back side of the impeller reduce thrust with hydraulic balancing of the pressures. Replaceable case wear rings are utilized in the casing and volute cover and held by set screws.

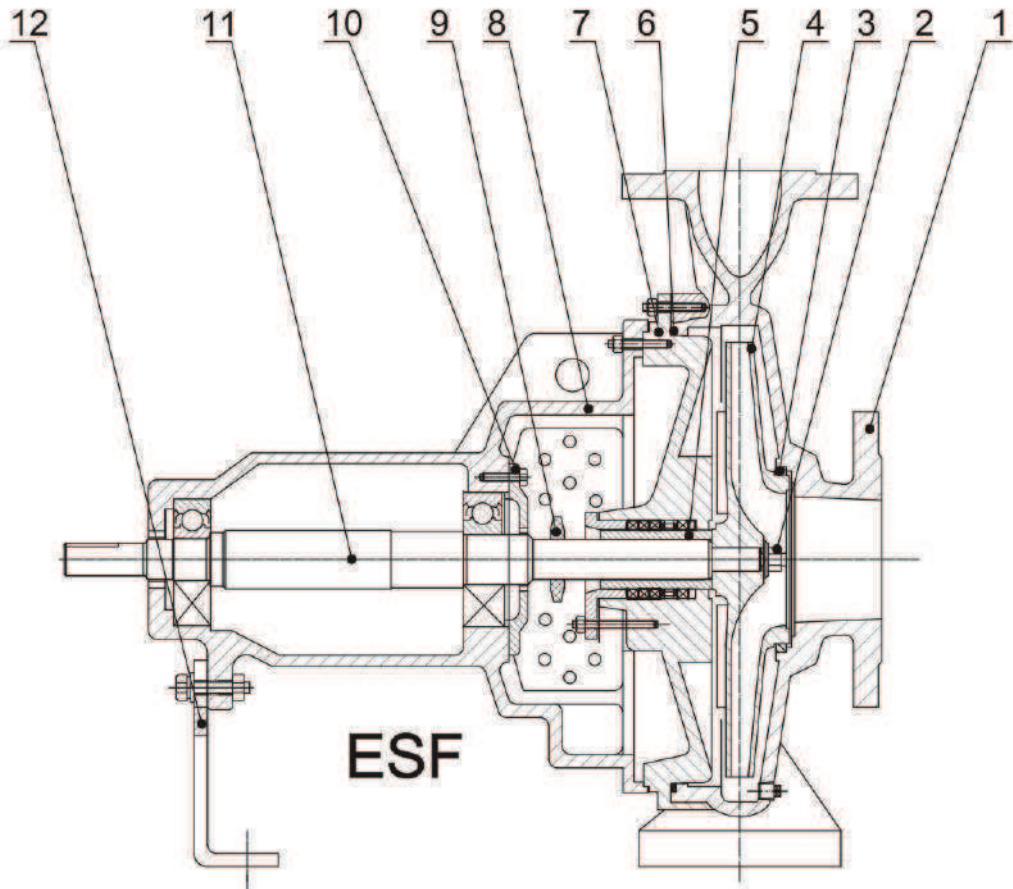
generously proportioned to insure long packing life. Each box has a water seal ring located in the approximate center of the box. Sealing water is injected via an internal, precision-drilled passage to the seal ring for distribution to the packing.

STUFFING BOX GLANDS : Glands are externally adjustable and can be removed without disturbing the driver

SHAFT SLEEVES: The shaft sleeve extends from the impeller through the stuffing box and is O ring sealed and locked with a key.

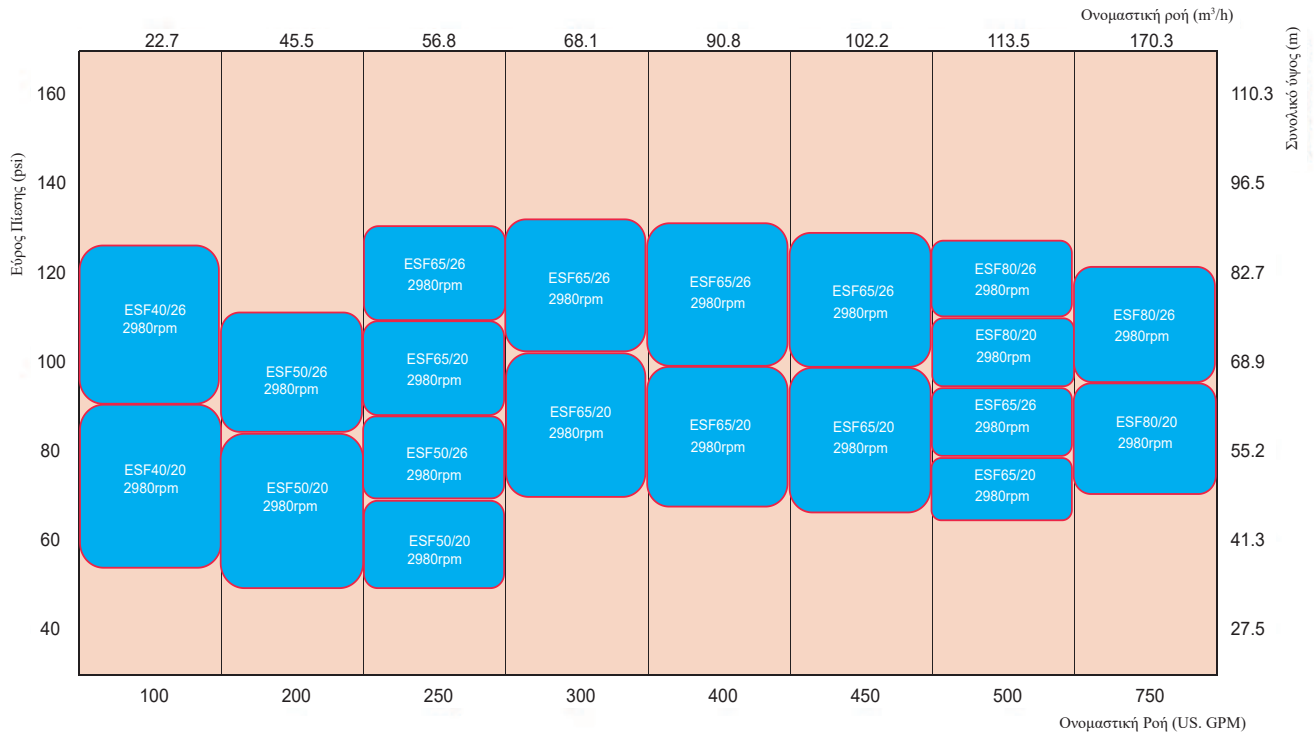


ASSEMBLY SECTION AND STANDARD MATERIAL LIST

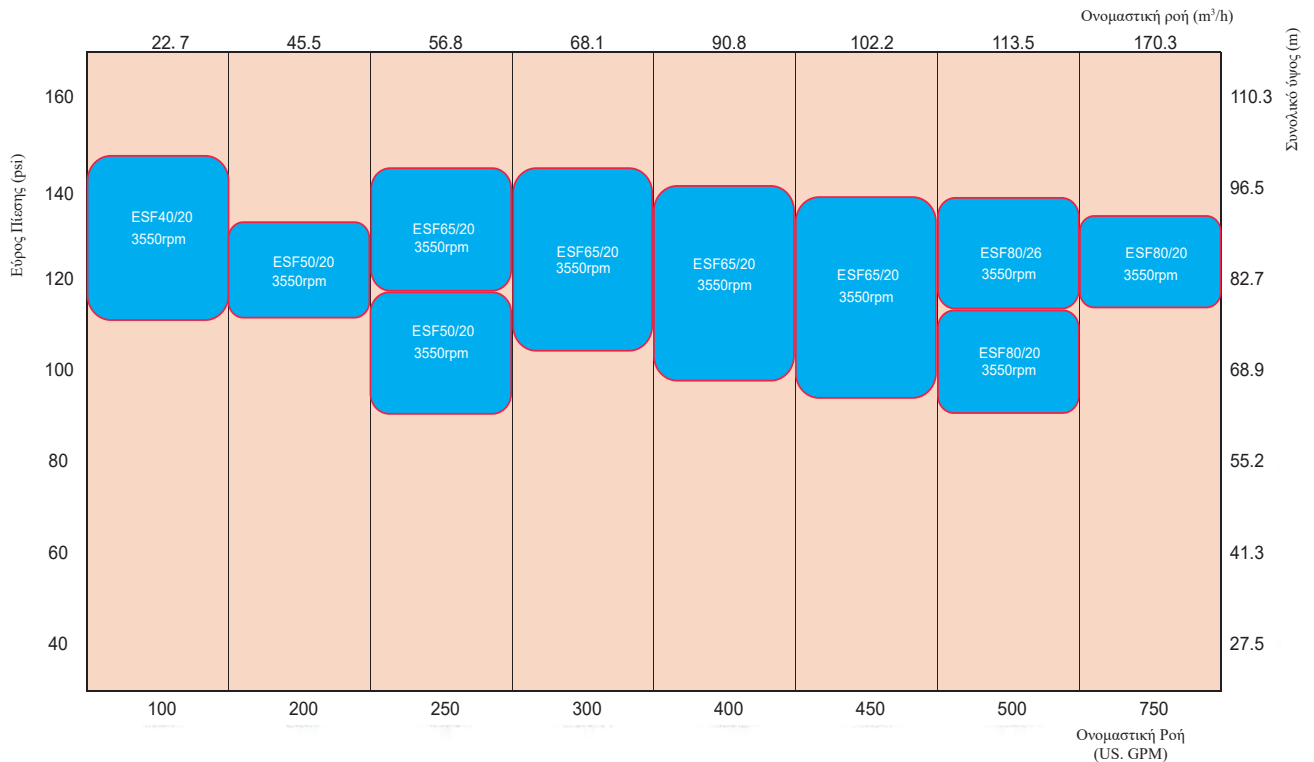


No.	Name	Material	No.	Name	Material
1	Casing	Ductile Cast Iron	7	Casing cover	Ductile Cast Iron
2	Impeller Nut	Stainless Steel	8	Bearing Housing	Cast iron
3	Casing wear ring	Brass	9	Water-proof ring	NBR
4	Impeller	Bronze	10	Bearing cover	Cast iron
5	Packing sleeve	Stainless Steel	11	Shaft	Stainless Steel
6	O-ring	NBR	12	Bearing Bracket	Carbon steel

UL/ FM END-SUCTION FIRE PUMP PERFORMANCE RANGE (50Hz)



UL/ FM END-SUCTION FIRE PUMP PERFORMANCE RANGE (60Hz)

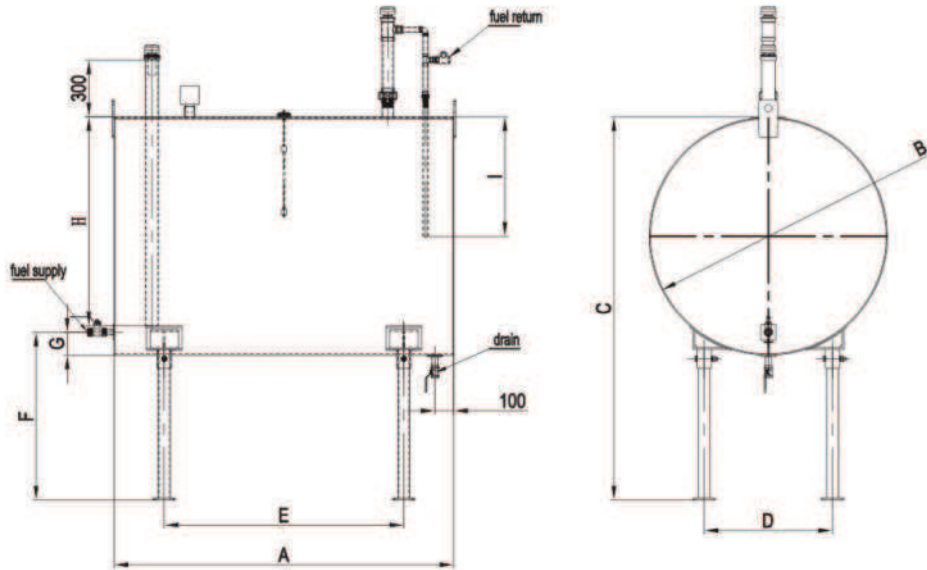


ACCESSORIES (CONTROL PANEL)



ACCESSORIES (FUEL TANK)

THE OUTLINE DIMENSIONS OF FUEL TANK

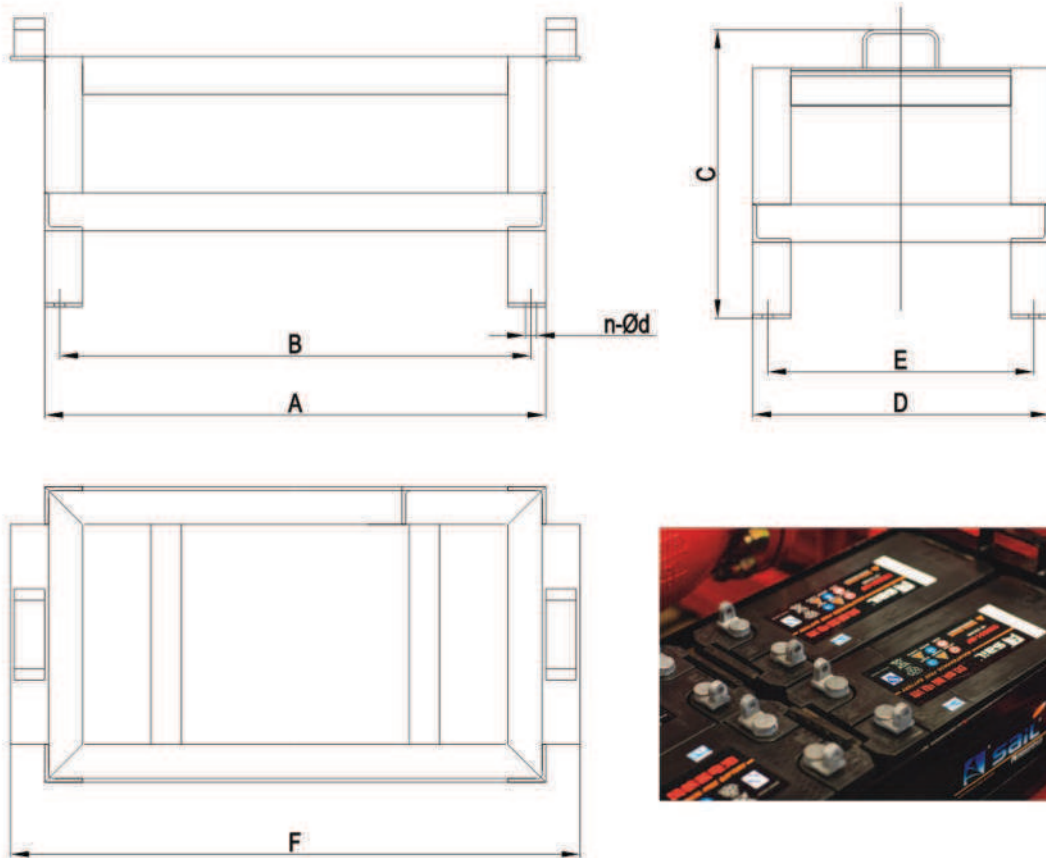


(UNIT:MM)

Fuel Tank Volumn	A	B	C	D	E	F	G	H	I	Fuel Supply	Fuel Return	Drain
200L	700	638	1426	390	400	851	65	570	315	Rc1/2"	Rc1/2"	1"
400L	1300	638	1426	390	770	851	65	570	315	Rc1/2"	Rc1/2"	
600L	1300	828	1580	580	770	842	90	726	415	Rc1/2"	Rc1/2"	
800L	1600	828	1580	580	1070	842	90	726	415	Rc1/2"	Rc1/2"	
1000L	1300	998	1774	580	770	874	100	846	515	Rc1/2"	Rc1/2"	
1200L	1600	998	1774	580	1070	874	100	846	515	Rc3/4"	Rc1/2"	
1500L	1300	1262	2035	680	770	891	122	1110	635	Rc3/4"	Rc3/4"	
1800L	1500	1262	2035	680	970	891	122	1110	635	Rc3/4"	Rc3/4"	
2100L	1800	1262	2035	680	1270	891	122	1110	635	Rc3/4"	Rc3/4"	
2500L	1600	1432	2199	700	1070	903	140	1281	715	Rc3/4"	Rc3/4"	
3100L	1600	1622	2363	920	1070	893	157	1470	810	Rc3/4"	Rc3/4"	
3600L	1800	1622	2363	920	1270	893	157	1470	810	Rc3/4"	Rc3/4"	
4100L	1800	1722	2474	920	1270	914	167	1560	860	Rc3/4"	Rc3/4"	
4500L	2000	1722	2474	920	1470	914	167	1560	860	Rc3/4"	Rc3/4"	

ACCESSORIES (BATTERY)

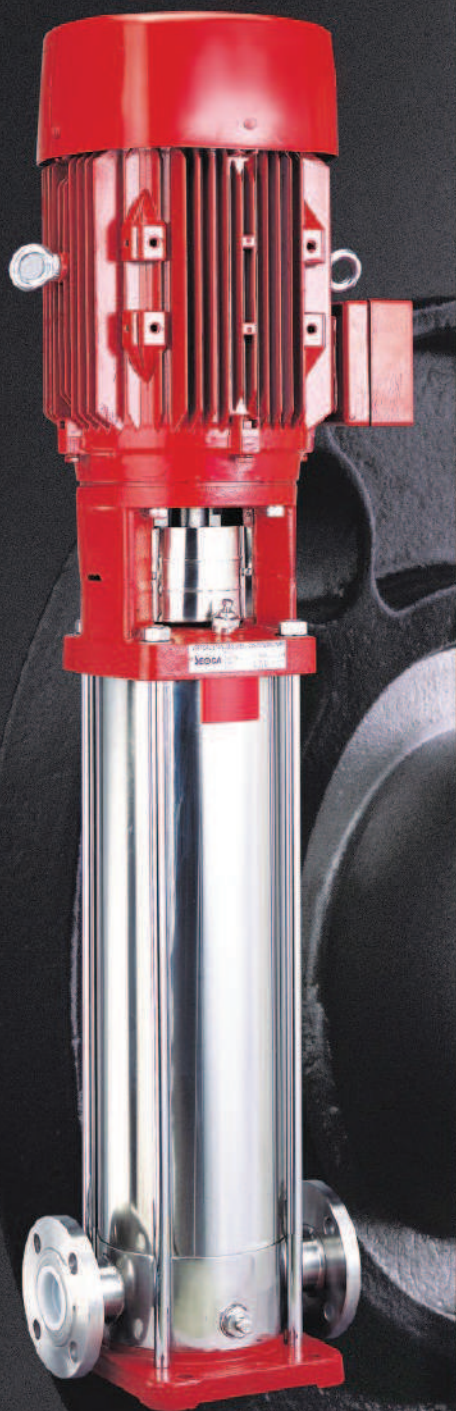
THE OUTLINE DIMENSIONS OF BATTERY RACK



(UNIT:MM)

Battery capacity	A	B	C	D	E	F	n-Ød
80Ah	660	620	380	390	350	750	4-Ø14
100Ah	860	820	380	390	350	950	4-Ø14
120Ah	860	820	380	390	350	950	4-Ø14
150Ah	1060	1020	380	460	420	1150	4-Ø14
180Ah	1060	1020	380	480	440	1150	4-Ø14
200Ah	1060	1020	380	590	550	1150	4-Ø14

**JOCKEY PUMP
ANTAIA JOCKEY**

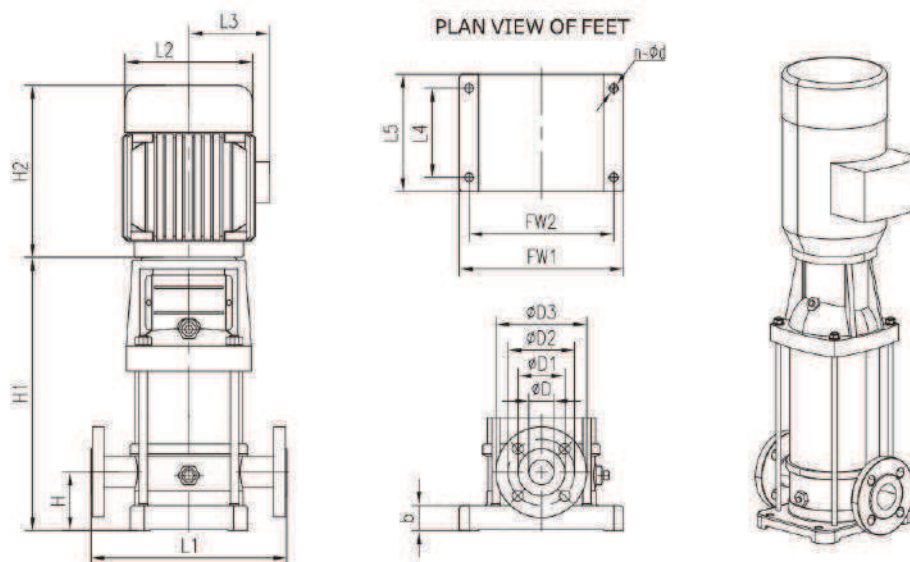


CDL 10



ACCESSORIES (JOCKEY PUMP)

THE OUTLINE DIMENSIONS DRAWING OF VERTICAL MULTISTAGE CENTRIFUGAL PUMP (CDL TYPE)



(UNIT:MM)

TYPE	Speed (rpm)	DIMENSIONS													FLANGE				Weight (Kg)
		L1	L2	L3	L4	L5	FW1	FW2	H	H1	H2	h	n	d	D	D1	D2	D3	
CDL2 9	2900	250	170	142	100	150	180	210	75	394	245	32	4	13	32	60	85	115	28
CDL2 11		250	170	142	100	150	180	210	75	430	245	32	4	13	32	60	85	115	29
CDL2 13		250	190	155	100	150	180	210	75	476	290	32	4	13	32	60	85	115	35
CDL2 15		250	190	155	100	150	180	210	75	512	290	32	4	13	32	60	85	115	36
CDL2 7	3500	250	190	155	100	150	180	210	75	368	290	32	4	13	32	60	85	115	32
CDL2 9		250	190	155	100	150	180	210	75	404	290	32	4	13	32	60	85	115	36
CDL2 11		250	190	155	100	150	180	210	75	440	290	32	4	13	32	60	85	115	37
CDL2 13		250	197	165	100	150	180	210	75	486	345	32	4	13	32	60	85	115	44
CDL3 15	2900	250	170	142	100	150	180	210	75	502	245	32	4	13	32	60	85	115	32
CDL3 17		250	190	155	100	150	180	210	75	548	290	32	4	13	32	60	85	115	38
CDL3 19		250	190	155	100	150	180	210	75	584	290	32	4	13	32	60	85	115	39
CDL3 21		250	190	155	100	150	180	210	75	620	290	32	4	13	32	60	85	115	42
CDL3 13	3500	250	190	155	100	150	180	210	75	476	290	32	4	13	32	60	85	115	38
CDL3 15		250	190	155	100	150	180	210	75	512	290	32	4	13	32	60	85	115	39
CDL3 17		250	190	155	100	150	180	210	75	548	290	32	4	13	32	60	85	115	40
CDL3 19		250	197	165	100	150	180	210	75	594	345	32	4	13	32	60	85	115	48
CDL4 10	2900	250	190	155	100	150	180	210	75	512	290	32	4	13	32	60	85	115	37
CDL4 12		250	190	155	100	150	180	210	75	566	290	32	4	13	32	60	85	115	38
CDL4 14		250	197	165	100	150	180	210	75	630	345	32	4	13	32	60	85	115	46

ACCESSORIES (JOCKEY PUMP CONTROLLER)

MYRIADPRO-BOLD;

- ⌘ All adjustments on door front
- ⌘ Visual indicators
 - 🕒 Automatic motor run
 - 🕒 Manual motor run
 - 🕒 Off mode
 - 🕒 Motor overload
 - 🕒 System pressure
 - 🕒 Three phase power source monitoring
- ⌘ Operators
 - 🕒 Auto OFF Manual Switching knob
 - 🕒 Start and stop push buttons



- ⌘ EMJ+ 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 in the sprinkler system piping.



- ⌘ EMJ+ jockey pump controller is equipped with intelligent digital display meter installed on the door front. The meter allows the user to set and adjust all required parameters, for example start and stop pressure, without having to open the controller door.
- ⌘ The standard power circuit consists of a horsepower rated disconnect switch, magnetic motor starter and a thermo-magnetic motor protector for short circuit and overload protection.

ACCESSORIES (FIRE PUMP FLOW METER)

- FM Approval flow meters
- Patented accuracy of 0.5%
- Friction loss less than 1 psi
- 612 warranty: 6yr gauge / 12yr venturi
- Digital gauge with 4-20ma transmitter
- Substantial inventory for quick shipping



Pump GPM	Meter Range Min. & Max GPM	Model Number Grooved	Model Number Butt Weld	Model Number 150#Flanged	Model Number Threaded *300#FLANGED
25	12.5 50	*1.25" 25 G	1.25" 25 B	*1.25" 25 F	1.25" 25 T
50	25 100	*2" 50 G	2" 50 B	*2" 50 F	2" 50 T
100	50-200	2.5" 100 G	2.5" 100 B	2.5" 100 F	*2.5" 100 F3
150	75 300	3" 150 G	3" 150 B	3" 150 F	*3" 150 F3
200	100 400	3" 200 G	3" 200 B	3" 200 F	*3" 150 F3
250	125 500	4" 250 G	4" 250 B	4" 250 F	*4" 250 F3
300	150 600	4" 300 G	4" 300 B	4" 300 F	*4" 300 F3
400	200 800	4" 400 G	4" 400 B	4" 400 F	*4" 400 F3
450	225 900	4" 450 G	4" 450 B	4" 450 F	*4" 450 F3
450	225 900	5" 450 G	5" 450 B	5" 450 F	*5" 450 F3
500	250-1000	5" 500 G	5" 500 B	5" 500 F	*5" 500 F3
750	375-1500	5" 750 G	5" 750 B	5" 750 F	*5" 750 F3
500	250-1000	6" 500 G	6" 500 B	6" 500 F	6" 500 F3
750	375-1500	6" 750 G	6" 750 B	6" 750 F	6" 750 F3
1000	500-2000	6" 1000 G	6" 1000 B	6" 1000 F	6" 1000 F3
1250	625-2500	6" 1250 G	6" 1250 B	6" 1250 F	6" 1250 F3

ACCESSORIES (PRESSURE RELIEF VALVE)

- UL Listed / ULC Listed
- Factory Mutual Approved
- Fast Opening to Maintain Steady Line Pressure
- Accommodates Wide Range of Flow Rates
- Closes Gradually for Surge-Free Operation
- Adjustable Pressure Settings, Not Affected by Pressure At Valve Discharge



Specifications

Globe: 2" - 10" flanged Angle: 2" - 10" flanged

150 and 300 ANSI B16.42

Class 150 - 250 psi Max. Class 300 - 300 psi Max

Water, to 180°F Max.

Main Valve Body & Cover

Ductile Iron ASTM A536 Grade 65-45-12

Standard Main Valve Trim: Bronze Seat, Teflon Coated Stainless Steel Stem, Dura-Kleen

Stem

Standard Pilot Control System: Cast Bronze with Stainless Steel trim

Available in the following relief

pressure ranges:

20-200 psi (150 Class) 100-300 psi (300 Class)

Protective epoxy resin coating

of wetted surfaces of main

valve cast iron components

(UL listed HNFx EX2855)

ACCESSORIES (SUCTION PRESSURE GAUGE)

Axial installation, 1.6Grade, Connection: NPT1/2"

The diameter of dial:100mm

Measurement range: -0.1bar~9bar



ACCESSORIES (DISCHARGE PRESSURE GAUGE)

Axial installation, 1.6 Grade, Connection:NPT1/2",

The diameter of dial:100mm

Measurement range: 0 psi ~300psi, 0 psi ~400psi (UL/FM) ,

0 bar ~16 bar, 0 bar ~25 bar



ACCESSORIES (SILENCER)

- Attenuation Level: 15 dB(A) , 25 dB(A) , 35 dB(A), 45 dB(A)
- Orientation: Horizontal; Vertical
- Standard Flange: ANSI
- Optional Flange: DIN, JIS, BS, GB and others
- Standard Material: Mild Steel
- Optional Material: Cor-ten; Aluminized Steel
- Stainless Steel 304, 316, 316L



No.	Diesel Engine Type	Silencer			
		Inlet dimension	Industrial grade	Household grade	Non Spark
1	NM4-90	DN50	EL-75	EX25-75	EXA15-75
2	NM4-105	DN65	EL-75	EX25-75	EXA15-75
3	NM4-108	DN65	EL-75	EX25-75	EXA15-75
4	NM6-102	DN80	EL-75	EX25-75	EXA15-75
5	IF05AH-F	DN80	EL-75	EX25-75	EXA15-75
6	IF05ATH-F	DN80	EL-75	EX25-75	EXA15-75



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