



**MECTRON ENGINEERING PTE LTD**  
*Engineered Systems & Solutions for Marine & Offshore*

## **FIRE FIGHTING SYSTEMS FOR MARINE / OFFSHORE APPLICATION**

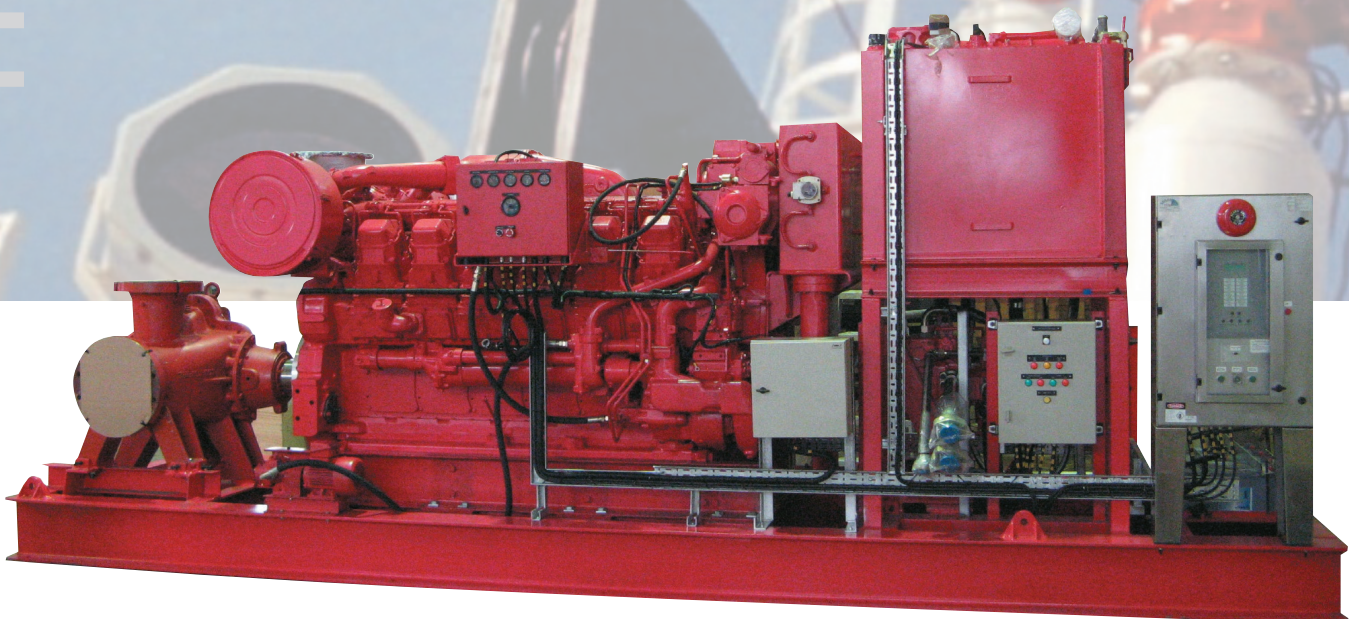
# **FIRE FIGHTING SYSTEMS**

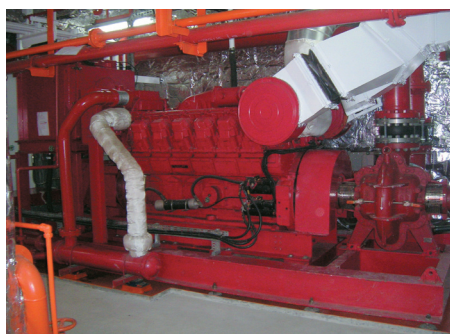
Mectron has the engineering capability to be the single source supplier to various fire pump packages for marine/offshore application.

Fire pump system can be provided in the various arrangements:

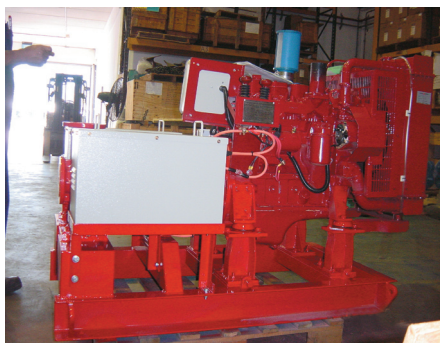
- Diesel Engine – Hydraulic Fire Pump System
- Direct Diesel Engine Driven Fire Pump System
- Diesel Engine / Electric Fire Pump System
- Direct Electric Fire Pump System

The fire system and ancillaries are built and supplied according to NFPA20 regulation and able to meet the various requirements of the marine classification societies.





FIRE PUMP SET (ENGINE DRIVEN)  
FOR FRONT PUFFIN FPSO



EMERGENCY FIRE PUMP SET  
FOR NDC

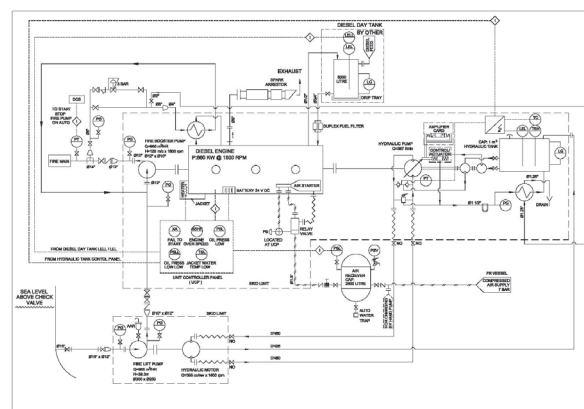


PORTABLE FIRE PUMP SET  
(ENGINE DRIVEN) FOR OSA

## DIESEL ENGINE / HYDRAULIC FIRE PUMP PACKAGE

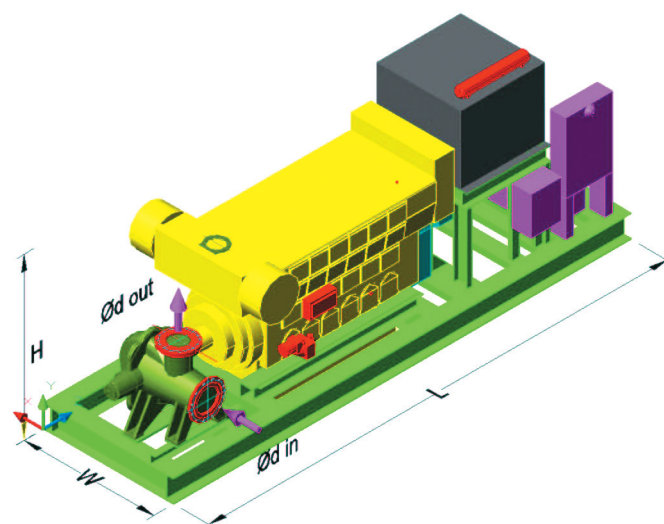
### Basic Feature of the system :

- Common steel skid
- Marine Diesel Engine
- Main Booster Pump; horizontal split case type, Nickel Aluminium bronze Soft packing seal
- Hydraulic pump / Hydraulic Oil Tank
- Lift Pump, split case pump, NiAlBr.
- Hydraulic Motor
- Highly flexible Coupling with "slip on" feature.
- NFPA 20 Fire Pump Controller
- Hydraulic system Control
- Dual battery starter/ charger for engine cranking
- Water Cooling heat exchanger and piping for engine cooling
- Exhaust Silencer with spark arrestor.



### Optional:

- A60 containerised set
- Diesel Fuel Day Tank
- CO2 suppression system
- Room Cooler
- Alternative Engine Starter: Hydraulic or Pneumatic.
- Pump in different material ; Duplex Stainless Steel
- Pump with mechanical seal



Capacity	Discharge	Dimension			Diesel Engine Rating		Pump Nozzle dia mm	
m <sup>3</sup> /hr	barg	L(mm)	W (mm)	H(mm)	kw	rpm	suction	discharge
900 to 1200	12	6000	2050	2400	860	1800	300	250
1800 to 2400	12	7500	2200	2700	1300	1200	450	450

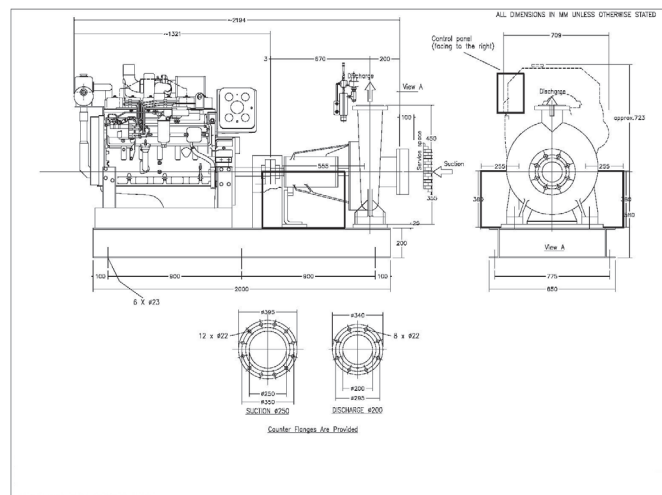
## DIRECT DIESEL ENGINE DRIVEN FIRE PUMP SYSTEM

### The Basic Feature of the system:

- Common steel skid
- Marine Diesel Engine
- Fire Pump; end suction or split case type, Nickel Aluminium bronze, mechanical seal
- battery starter/ charger for engine cranking
- Air ejector for priming of pump

### Option

- Engine Cooling : Air or Water.
- Exhaust Silencer.
- NFPA 20 Fire Pump Control.



Capacity		Discharge		Diesel Engine Rating		Pump Nozzle dia. (mm)		Pump
usgpm	m <sup>3</sup> /hr	psig	M	kw	rpm	suction	discharge	type
300	68	90	63	22	3000	75	50	ES
400	90	115	80	55	3000	75	50	ES
500	115	115	80	55	3000	100	75	ES
750	170	200	140	110	3000	100	80	ES
1000	227	185	130	110	3000	150	125	HSC
1500	340	135	95	132	1500	200	150	HSC
2000	454	210	150	275	1800	200	150	HSC
2500	570	185	130	300	3000	200	200	HSC
3000	680	230	160	450	1800	250	200	HSC
3500	800	210	150	450	1800	250	200	HSC
4000	910	240	170	600	1800	300	250	HSC
5000	1140	230	160	700	1800	300	250	HSC

ES End Suction

HSC Horizontal Split Case

Capacity rating to NFPA 20

## ACCESSORIES FOR FIRE FIGHTING SYSTEM

In addition to the fire pump package, Mectron supply Fire Monitors, Water Spray system and Foam system.

### FIRE MONITORS

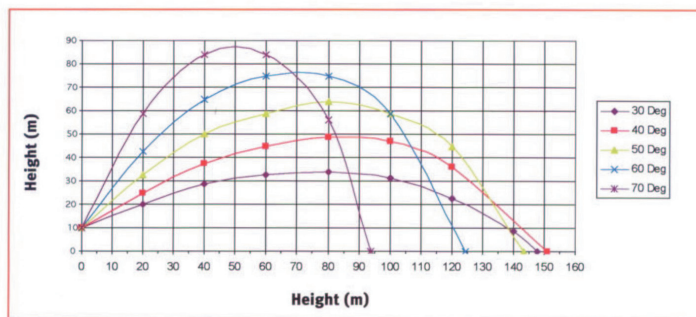
Monitors can be fitted with either single or dual branch pipes at the outlets. This will assure optimum water range, foam aspiration and delivery performance.





## FIRE SYSTEM CLASSIFICATION SOCIETY REQUIREMENTS

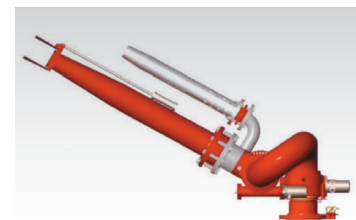
Class Notation	I		II		III	
No. of monitors	2	2 (DnV)	3	4	3 (DnV)	4
Cap. Of monitors in m <sup>3</sup> /hr	1200	3600	2400	1800	3200	2400 / 2500
No. of pumps	1 – 2	2	2 – 4		2	4
Total pump cap. In m <sup>3</sup> /hr	2400	7200	7200		9600	9600 / 10000
Length of throw in meters	120	180 (from bow)	150		180 (from bow)	150
Height of throw in meters	45	110 at 70m	70		110 at 70m	70
Fuel oil capacity in hours	24	96	96		96	



A trajectory chart for a 150mm monitor, 12.0 bar inlet pressure with a flow of 1200 m<sup>3</sup>/hr. Note that the reach exceeds the minimum requirements of 120m by 25%. The fire-fighting system is built to meet and exceed the requirements of all three classifications shown in the chart (FiFi I, II, and III)

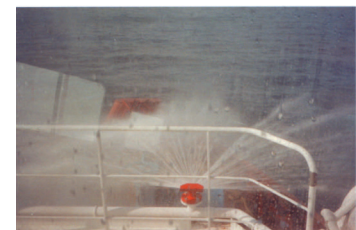


A monitor with a water nozzle and spray deflector

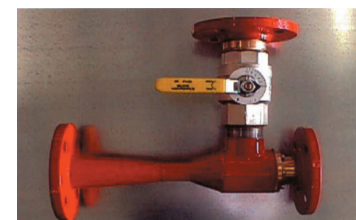


A dual outlet monitor with 1200m<sup>3</sup>/hr water nozzle and spray deflector, plus an air aspirating branch for water and foam mixture.

Reference Installations	Vessel	Owner	Fire Pumps
	Front Puffin FPSO	Sea Production	960 m <sup>3</sup> /hr x 140m (2 units)
	Fire Tug Boat	OSA	600 m <sup>3</sup> /hr x 120m (2 units)
	Supply Vessel	Pertamina	600 m <sup>3</sup> /hr x 120m (2 units)
	B260 Jack-up Rig	NDC	500 usgpm x 300 ft (1 unit)
	T111/T112/T113/T114 AHTS	SPO	25 m <sup>3</sup> /hr x 60m (4 units)
	T137/T138/T139/T140 AHTS	SPO	25 m <sup>3</sup> /hr x 60m (4 units)



A water curtain nozzle



A typical around the pump proportioner

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