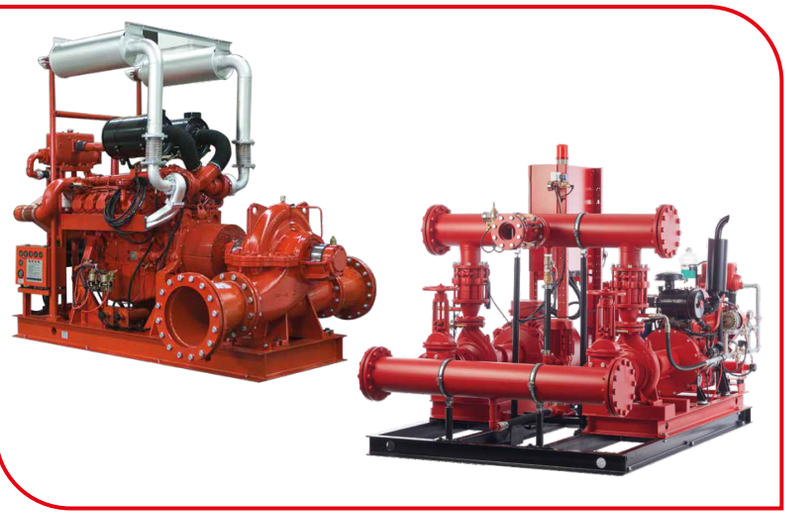
AquaMas®
Flow Systems

FIRE PUMPS
CONFORM TO NFPA 20



NFPA
MEMBER
2197916

NFPA 20 standard defines the installation requirements of the fixed pumps for fire protection. This standard is the most common and the most detailed standard in the world used for fire protection services.

The scope of NFPA 20 document include the selection of fire pumps, installation, acceptance tests and operation.

Standart Pompa, being a member of NFPA, follows all studies and publications related within the fire protection area.

Most of the consultant companies related with fire protection system design are making their designes according to NFPA standards. Besides, insurance companies are not taking risk and reducing the policy costs, if the fire system is not designed according to NFPA standards and the fire pumps are not selected according to NFPA 20.

AquaMas Fire Fighting Pump Features

AquaMas fire pumps are used to pressurize and keep the pressure of fire fighting systems such as;
- Sprinkler
- Fire Cabinets
- Hydrants

Different type of pumps may be used in fire fighting systems;

- End suction pumps
- Vertical in-line pumps
- Double suction split-case pumps
- Multistage pumps

AquaMas Fire pumps an groups fully conform the requirements of NFPA 20

Seperate controller for each pump.
- Max. flow velocity in suction pipe is below 3 m/s at rated capacity
- Pressure at zero flow is less than 1.4 times rated pressure
- Pressure at 1.5 x rated capacity is not less than 0.65 x rated pressure
- Service factor shall not exceed 1.15
- Materials;

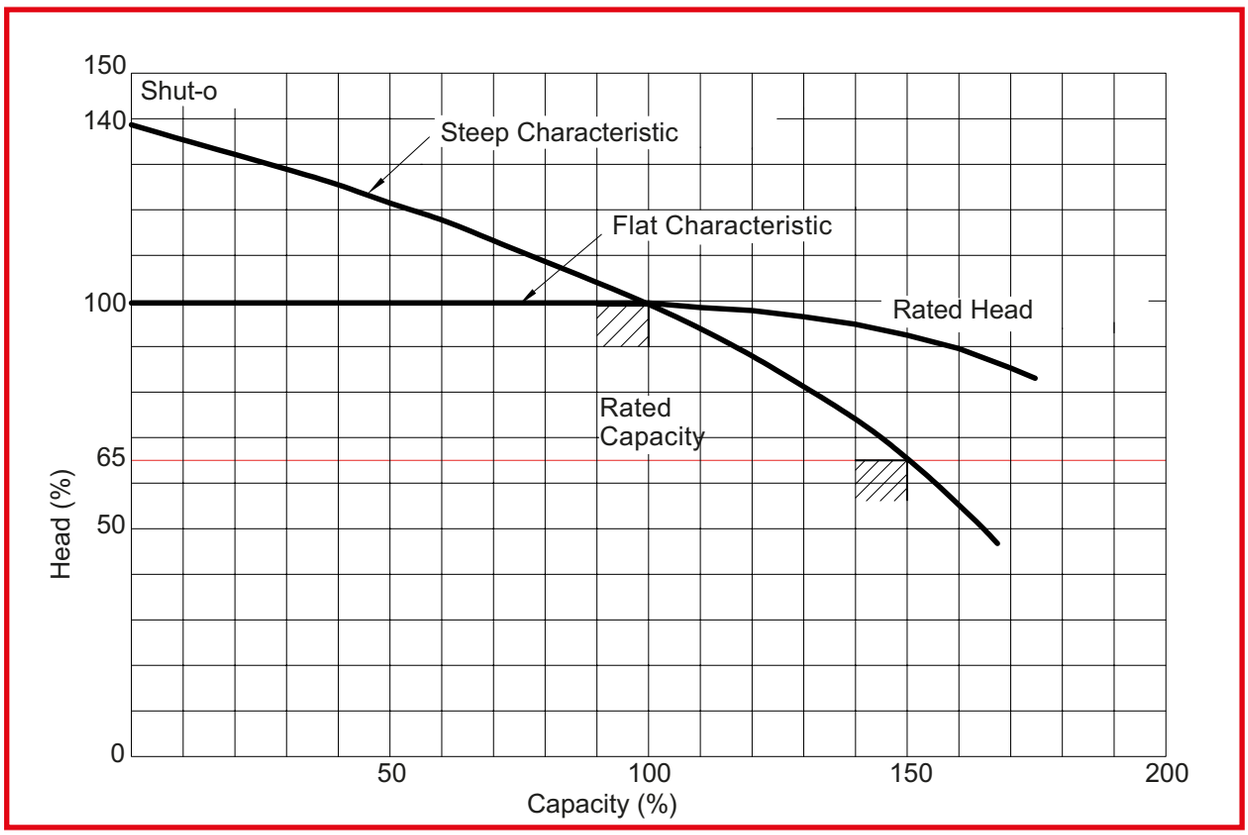
Casing	: Cast iron
Impeller	: Bronze
Shaft	: Stainless steel

- Shaft sealing: Soft packing or mechanical seal
- Bearings: L-10 rating of not less than 5000 hours at maximum load.
- Flanges according to EN 1092-2 PN 16.

Suggested accesories on the pump

- Automatic air release valve
- Circulation relief valve
- Increaser and reducer piping elements
- Pressure gauges at suction and discharge
- Flexible coupling

Fire Pump Performance Characteristics Conform to NFPA 20



Fire Pump Capacities Conform to NFPA 20

Rated capacities as per NFPA 20 [2016]

(GPM)	(l/min)	(m³/h)
25	95	5,7
50	189	11,4
100	379	22,7
150	568	34,1
200	757	45,4
250	946	56,8
300	1136	68,1
400	1514	91
450	1703	102
500	1892	114
750	2893	170
1000	3785	227
1250	4731	284
1500	5677	341
2000	7570	454
2500	9462	568
3000	11355	681
3500	13247	795
4000	15140	908
4500	17032	1022
5000	18925	1136

SNT End Suction

Horizontal, radially split volute casing type , single stage, end suction centrifugal pump with closed impeller.

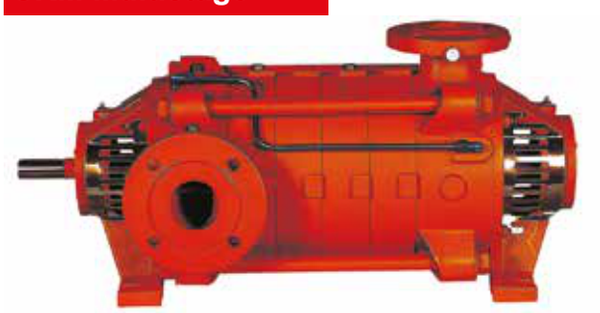
rated capacities (GPM)			rated pressures (m)
25	400	2000	40
50	450	2500	50
100	500	3000	60
150	750	3500	70
200	1000	4000	80
250	1250	4500	90
300	1500	5000	100

SDS Double Suction

Horizontal, single stage, axially split volute casing pumps with double suction radial impellers.

rated capacities (GPM)		rated pressures (m)
400	2000	50
450	2500	60
500	3000	70
750	3500	80
1000	4000	90
1250	4500	100
1500	5000	110
		120
		140

SKM Multistage



Horizontal ring section multistage centrifugal pumps with closed impellers and diusers.

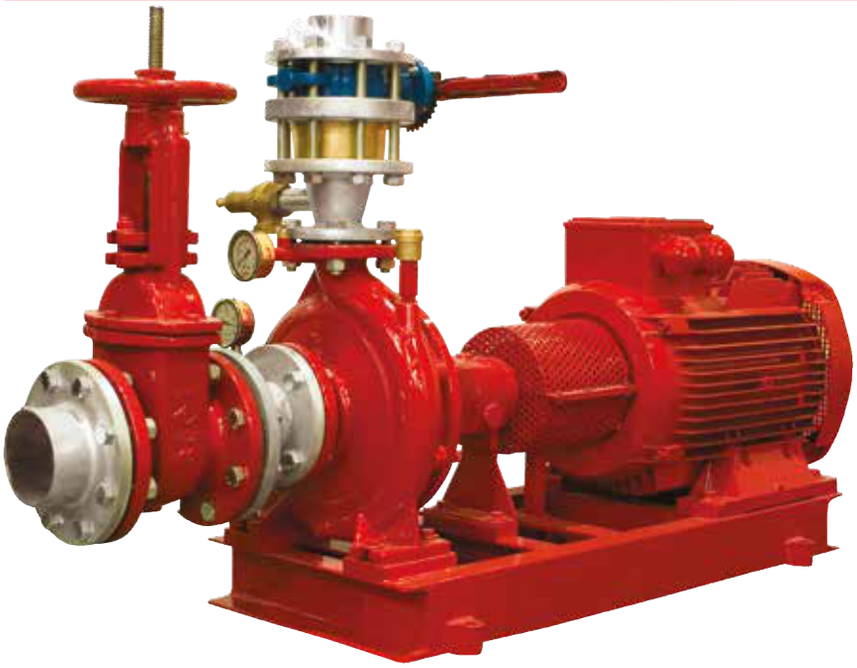
rated capacities (GPM)			rated pressures (m)	
25	300	1000	60	120
50	400	1250	70	130
100	450	1500	80	140
150	500	2000	90	150
200	750	2500	100	160
250			110	170

SKM Multistage - Multioutlet

Multioutlet design horizontal ring section multistage centrifugal pumps with closed impellers and diusers.

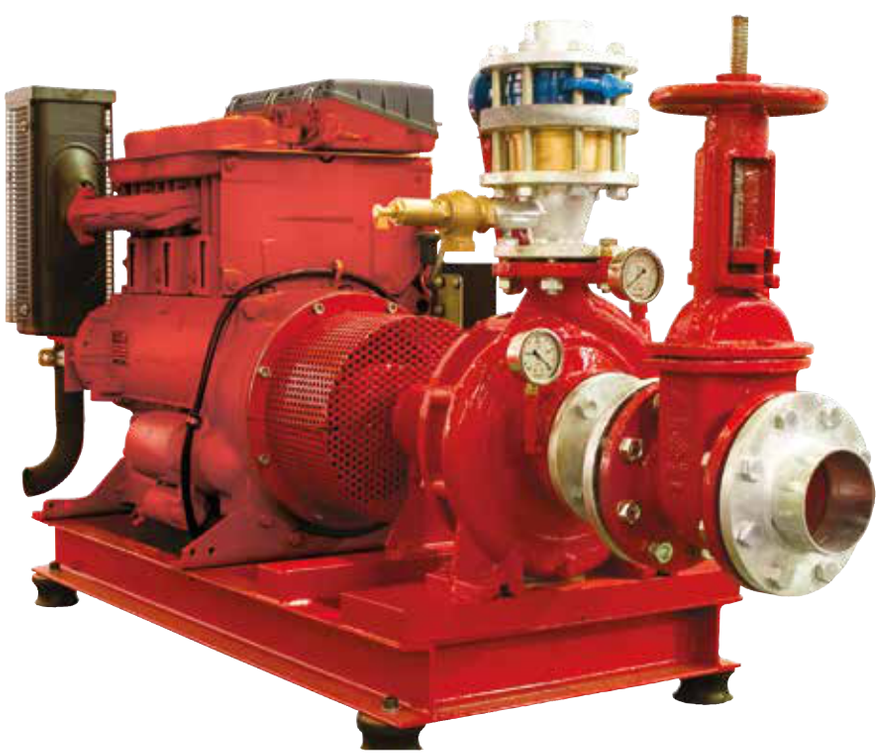
rated capacities (GPM)			rated pressures (m)	
25	300	1000	60	120
50	400	1250	70	130
100	450	1500	80	140
150	500	2000	90	150
200	750	2500	100	160
250			110	170

Fire Pump with Electric Motor



Fire Pump with Diesel Engine

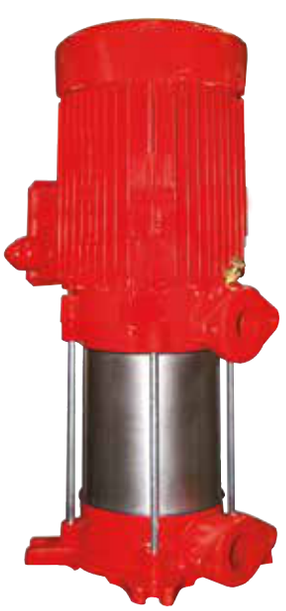
Generally 100 % redundancy is obtained by diesel engine-driven pumps. The requirements of diesel engine-driven pumps are defined in NFPA 20.

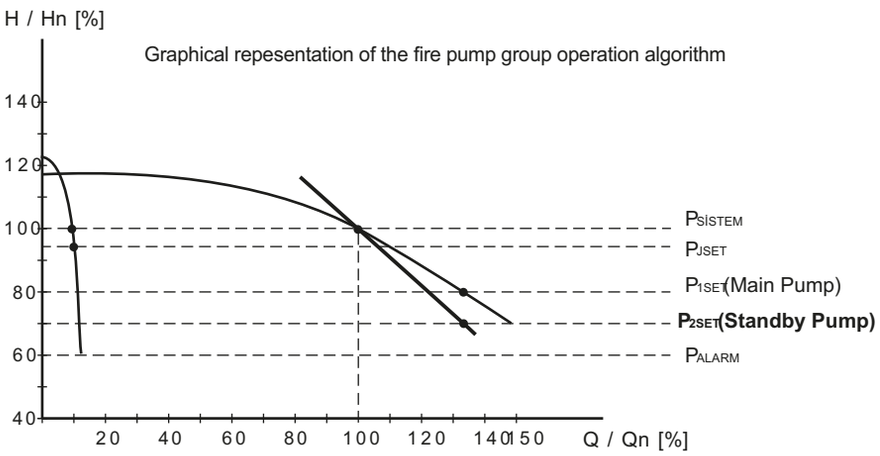


Jockey Pump

Jockey pumps should be selected at a capacity at which to increase the system pressure to the required value in 10 minutes after sensing the leakage in fire fighting system.

Generally a pump with % 3 of rated capacity (min 1 GPM), % 110 of rated pressure.





Manual Electric Control

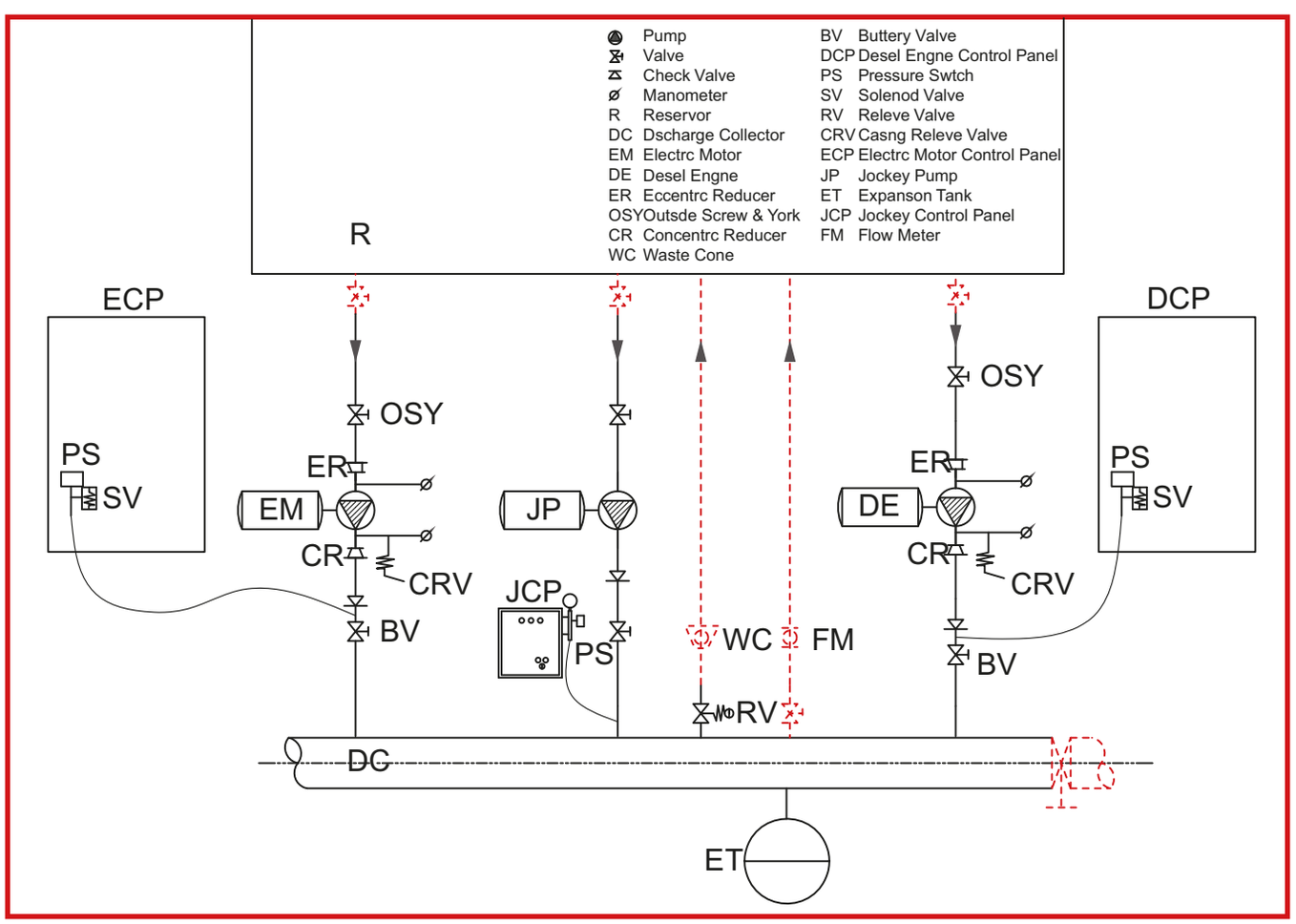
The manually operated switch (push button) can be used to run the motor manually. In this case operation can not be aected by the pressure-actuated switch.

Mechanical Control

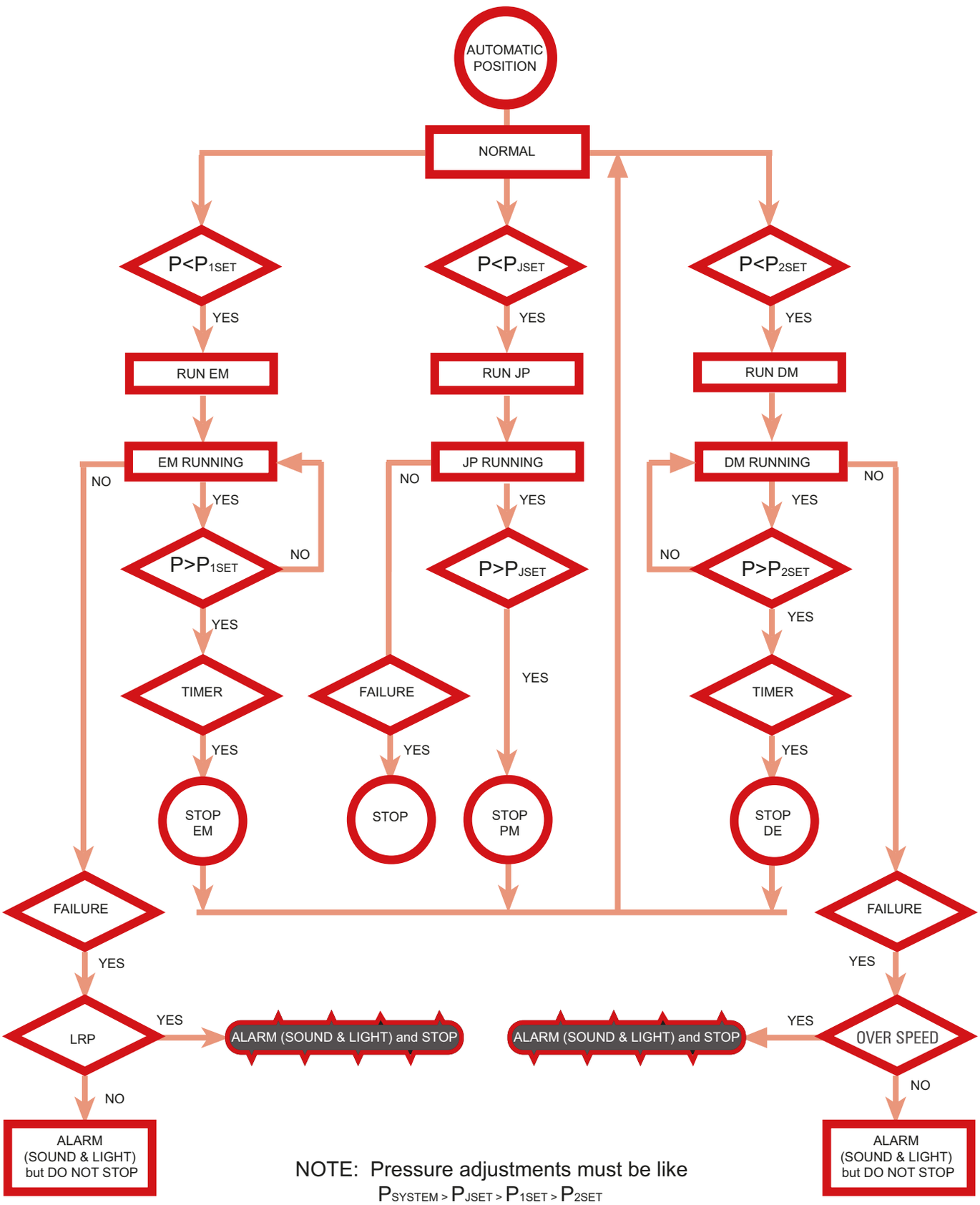
Emergency run handle on the controller can be used to operate pumps by mechanically closing the motor-circuit switching mechanism.

If the pressure drops below the set value (PJSET), jockey pump starts running with the signal coming from the pressure switch and continues to run for 10 minutes until the system pressure reaches the set value (PSYSTEM). If the pressure continues to drop, (P1SET) first the main pump starts to run. If the system pressure (PSYSTEM) can not supplied and pressure continues the drop

P&I Diagram for Fire Fighting Groups Conform to NFPA20



Automatic Operation Algorithm In Case Of Fire



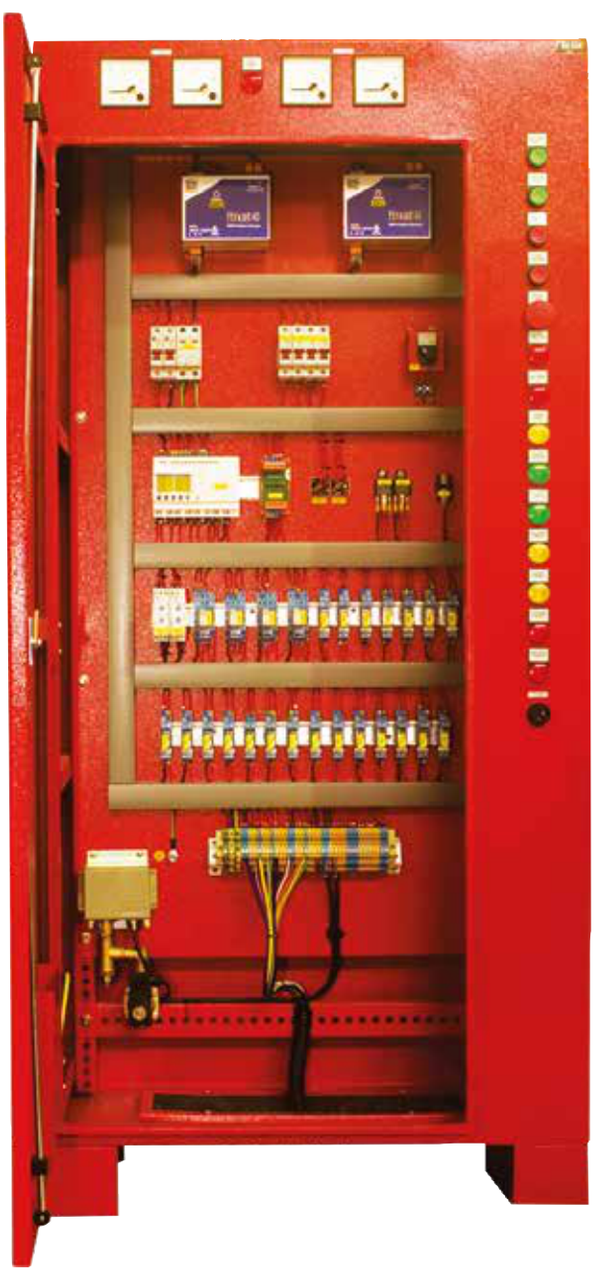
NOTE: Pressure adjustments must be like

$P_{SYSTEM} > P_{JSET} > P_{1SET} > P_{2SET}$

Control Panels According to NFPA 20

For Electric Motor

For Diesel Engine



The pictures used are representative.