

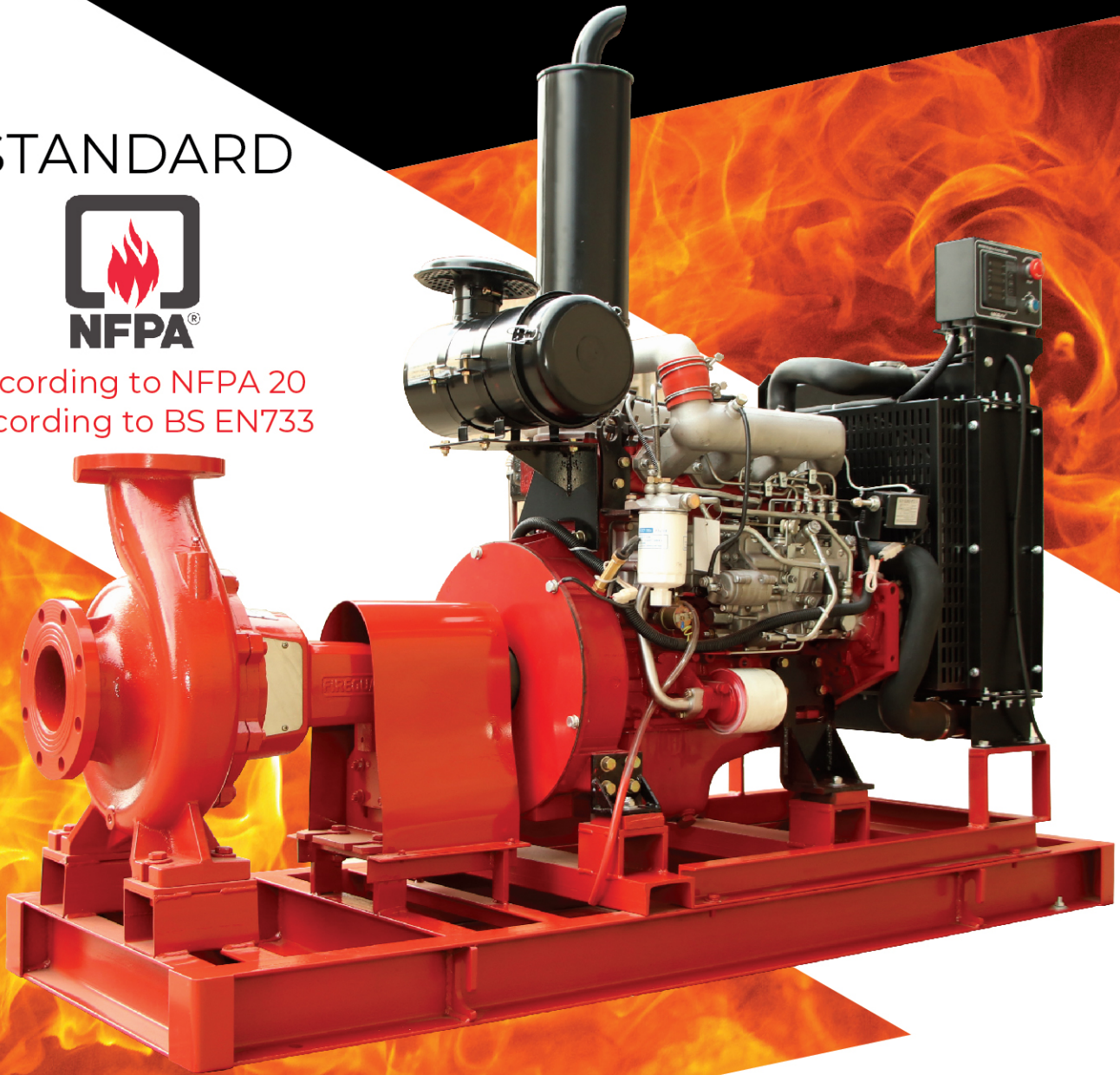


# FIRE FIGHTING PUMP SYSTEM

STANDARD



According to NFPA 20  
According to BS EN733



## 1000GPM@9Bar

### **FIREGUARD GLOBAL LTD.**

Tel: 00-44-8450751042 · Fax: 00-44-8459751043  
Email: [Info@Fireguard-Uk.com](mailto:Info@Fireguard-Uk.com) · [www.fireguard-Uk.com](http://www.fireguard-Uk.com)

Unit 11 · Chancel Industrial Estate · Newhall Street  
Willenhall · WV13 1NX · United Kingdom





## Fire fighting pumping station

### MODEL FGEDJ 1000-9-125-125-20

Elctrical Pump Model FGSM 100-250/900

Diesel Pump Model FGSD 100-250/900

Jockey Pump Model FGVT 32-70-2

#### DESCRIPTION

- **FGEDJ** Fire pumps are designed for long term operational life, the maximum reliability is always our first priority.
- The components are installed on high rigidity steel structure.
- Each controller has its own individual pressure sensing line or pressure switch.
- The suction line doesn't include a strainer(Prefer anti vortex plate).
- Each pump has a dedicated controller.
- Each pump is tested for performance per the designed system requirments before dispatching from the factory.

**FGEDJ** Fire Pump Set consists of End Suction Centrifugal Pump driven by Electric Motor, Diesel Motor, and Vertical multistage Jockey Pump. Pumps are assembled with discharge line and suction header accessories as well as controls.

The capacity from 250GPM up to 2500GPM and other capacity can be customized.

Accessories include Battery, OS&Y Gate Valves, Check Valves, Flexible Expansion Joints, Pressure Switches, Pressure Gauge, Base Frame, etc.

#### Advantages

- Working Automatically among the three pumps.
- Both Manual and Automatic operation modes are available.
- Diesel Pump work when the power is off.
- Easy Installation.
- Customized size: Pump set or individual are available based on client requirement.
- FGYE high efficient motor with protection degree IP55.
- Insulation class F.
- High performance and low power consumption.
- Pump case with Anti-corrosive coating with quality NSK bearings, wear resistance mechanical seal.
- Control available upon request.
- Low maintenance cost and available spare parts.
- Electronic battery charger.

#### TECHNICAL DATA

MODEL	DN mm	Power		GPM	H(bar)	H(max) m	V	V	Cl	IP	A	Hz	T max	ph	min-1
		kw	hp												
<b>Electric Pump</b> FGSM 100-250/900	125x100	90	125	1000	9	100	380	660	F	55	167/96.4	50	100	3	2900
<b>Diesel Pump</b> FGSD 100-250/900	125x100	90	125	1000	9	100	/	/	/	/	/	50	100	/	2900
<b>Jockey Pump</b> FGVT 32-70-2	65x65	15	20	106	10.7	130	380	660	F	55	31.8/18.6	50	100	3	2900

Suction side				Discharge side			
Pipe	Valve			Pipe	Valve		
8"-(DN200)	6"-(DN150)			8"-(DN200)	6"-(DN150)		



## TECHNICAL SHEET

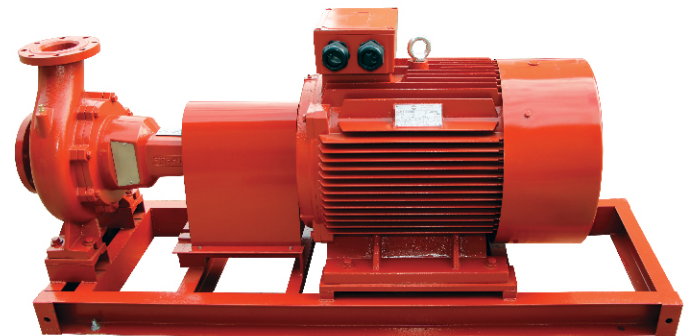
Model	FGSM 100-250-900
Capacity	1000 GPM
Head	9 bar
H max (Cut off head)	10 bar
DN	125*100 mm
Speed	2900 rpm
T max	100°C
Power	125HP - 90kW
Casing	Gray cast iron
Impeller	Bronze - DN: 270 mm
Shaft	Stainless steel 304
Sealant	Mechanical Seal
Bearing	Grease lubrication rolling bearing
Voltage	380v/3ph/50hz
Protection degree	IP55
Motor winding insulation class	F
Power connection	Star/Delta - <b>Option</b> (Soft starter)
Current	167/96.4
HZ	50

## DESCRIPTION

- Designed according to EN733 standard centerifugal pump.
- Available complete with electric motor or diesel engine.
- Easily back pull-out from driver.
- Pump case with anti-corrosive coating.
- Quality NSK bearing, wear resistance mechanical seal.
- According to NFPA 20, water fire centrifugal pump shall be of the overhung impeller design with close or separate coupled end suction type.
- Pump capacities are available based on the required calculated system demand.
- Fire pump shutoff head dosen't exceed 140% of the duty point.
- Recommended the maximum system demand flow correlate to a point on pump curve between 90% to 140% of the pump capacity.
- Pump head not less than 65% @flow rate equal to 150% of the operating point.

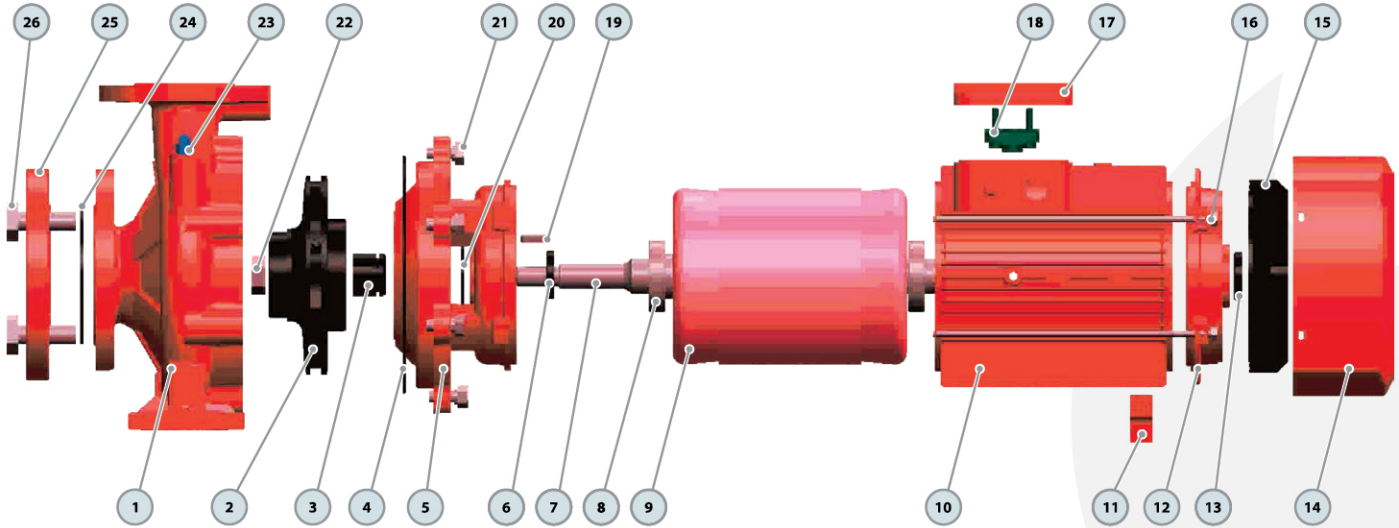
## Electric Motor Driven Pump

A standby provider of flow and pressure to the system in case of failure of the main pump and/or power supply is off.



## End Suction Centrifugal Pump FGSM

## Pump dismantle

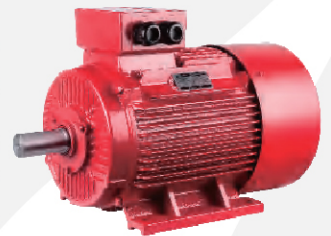
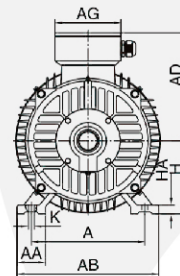
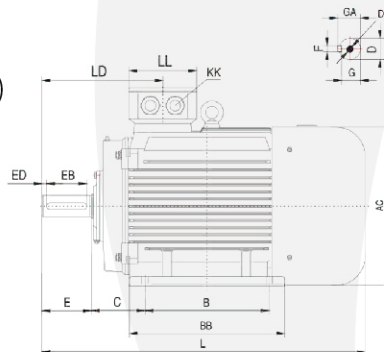


### MATERIAL DESCRIPTION

No.	Description	Material	No.	Description	Material	No.	Description	Material
1	Pump Case	Cast iron	10	Motor Case	Aluminum	19	Impeller Key	Iron
2	Impeller	Bronze	11	Support Foot	Plastic	20	Water Deflector	Rubber
3	Mechanical Seal	SiC/Carbon/SS304	12	Back Cover	Cast iron	21	Connection Bolt	Steel
4	O-ring	Rubber	13	Reinforced Seal	Rubber	22	Impeller Nut	Galvanized Steel
5	Connection	Cast iron	14	Fan Cover	Aluminum	23	Release Valve	Brass
6	Reinforced Seal	Rubber	15	Fan	Plastic	24	Gasket	Rubber
7	Shaft	SS304/45# Steel	16	Through Bolt	Steel	25	Counter Flange	Galvanized Cast iron
8	Bearing	Ball Bearing	17	Terminal Box	Aluminum	26	Flange Bolt	Steel
9	Wound Stator/Rotor	Silicon Steel/Copper	18	Terminal Board	Plastic			

## FGYE

- Design according to IEC60034 standard
- Total enclosed fan cooling type motor(TEFC)
- FGYE high efficient motor
- Protection degree IP55
- Motor winding Insulation Class F
- Quality NSK bearing
- Continuous duty S1
- Reliable used for fire fighting system etc.
- Ambient temperature up to +50°C
- Service of factor (1.15)



### TECHNICAL DATA

50 Hz n=2900 1/min

MODEL	Power kw	Power hp	RPM 1/min	$\eta$ %	$\eta$ 75%	$\eta$ 50%	$\cos \Phi$	A	Nm	Ts/Tn	$T_{max}/T_n$	Is/In	dB(A)	Kgs
FGYE-280S-2	90	125	2975	94.7	94.7	92.8	0.9	167/96.4	240.8	1.8	2.3	7.1	94	546

### DIMENSIONS mm

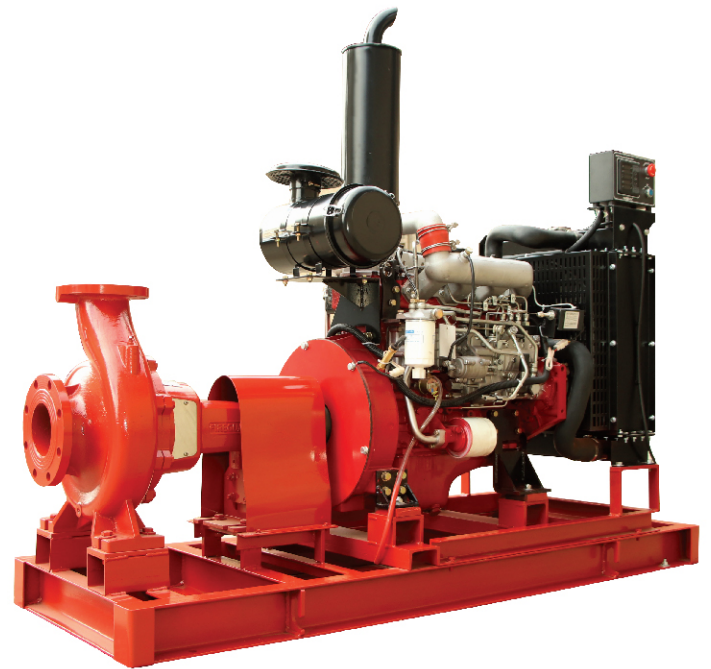
MODEL	A	AA	AB	AC	AD	AG	B	BB	C	D	DH	E	EB	ED	F	G	GA	H	HA	K	KK	L	LD	LL
FGYE-280S-2	457	85	542	547	387	248	368	485	190	65	M20X42	140	125	7.5	18	58	69	280	35	4- $\Phi$ 24	2-M63X1.5	982	355.5	218

## TECHNICAL SHEET

Model	FGSD 100-250/900
Capacity	1000 GPM
Head	9 bar
Head Max (Cut off head)	10 bar
DN	125*100 mm
Speed	3000 rpm
T max	100°C
Power	90kW - 125HP
Casing	Gray cast iron
Impeller	Bronze - DN: 270mm
Shaft	Stainless steel 304
Sealant	Mechanical Seal
Bearing	Grease lubrication rolling bearing
Voltage	24 VDC
HZ	50

## Diesel Engine Driven Pump

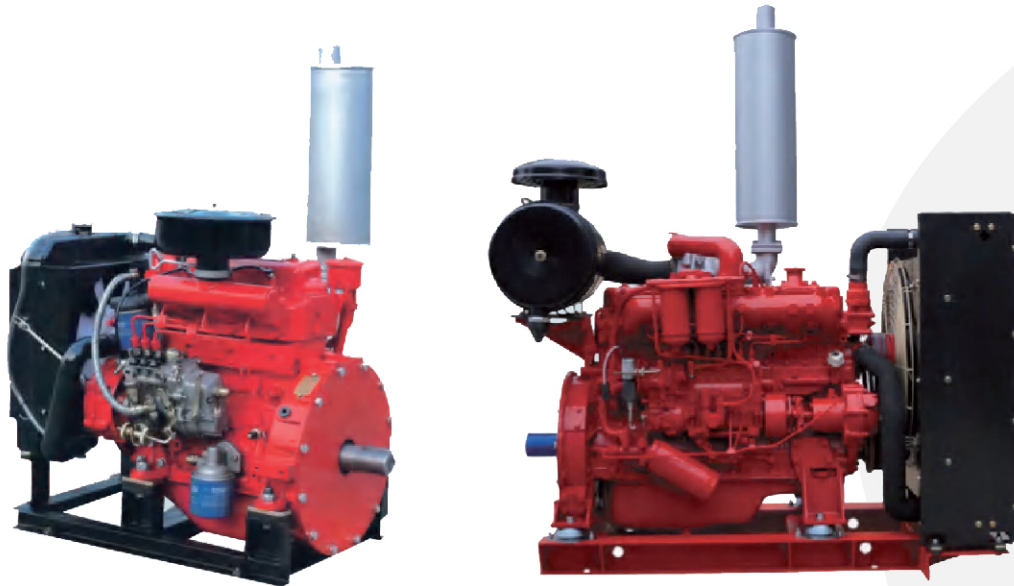
A standby provider of flow and pressure to the system in case of failure of the main pump and/or power supply is off.



## DESCRIPTION

- Diesel engines have proven to be very reliable and effective for driving standby fire pump.
- Diesel engines are from type of internal combustion engine permitted by NFPA 20.
- Each engine is provided with battery unit according to NFPA20.
- Advanced direct injection combustion chamber.
- Turbo charger for large capacity.
- Dedicated chassis for easy transportation, installation and handling.
- Dedicated Controller.
- Dedicated monitoring unit to follow up working parameters .
- Low vibration and Low noise design.
- Protection guard for moving parts.

## Diesel Engine FGD



### DESCRIPTION

- Water-cooling 3-to 6-cylinder naturally or turbo charging aspiration.
- Advanced direct injection combustion system.
- Extremely compact dimensions, easy to maintain and low space occupation.
- Noise reduction optimized technology and stronger power.
- Low fuel consumption and environmental protective.

### TECHNICAL DATA

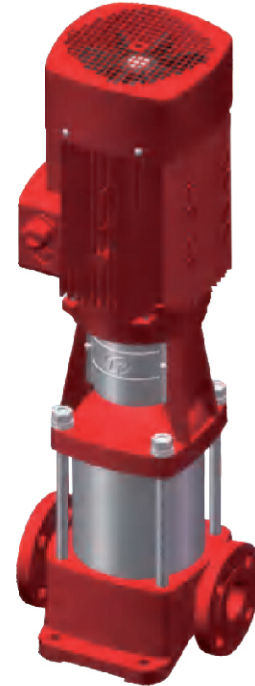
Model	485Z	490NZ	498Z	4102Z	4105Z	4108Z	490Z	4108T	4108TL	6102NT	6102T	6102TL	6126T	6126TL	6126TS	
Type	Direct Injection,4 strokes, Water-cooling															
Intake Type	Turbo-charging									Naturally		Turbo-charging				
Bore*Stroke(mm)	85*100	90*100	98*105	102*118	105*118	108*118	90*102	108*125	108*125	102*118	102*118	102*118	126*130	126*130	126*155	
Cylinder No.	4	4	4	4	4	4	4	4	4	6	6	6	6	6	6	
Displacement	2.27L	2.54L	3.168L	3.857L	4.087L	4.324L	2.6L	3.8L	3.8L	5.78L	5.78L	5.78L	9.726L	9.726L	9.726L	
r/min	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	
Rated kW	44KW	50KW	60KW	73KW	75KW	83KW	55KW	75KW	90KW	110KW	125KW	165KW	200KW	250KW	300KW	
Rated HP	60HP	68HP	81 HP	99HP	102HP	113HP	75HP	100HP	125HP	150HP	170HP	225HP	270HP	340HP	410HP	
Fuel Consumption (g/kw.h)	228	228	228	238	238	238	228	218	218	229	229	229	250	250	250	
Start Voltage	12V	12V	12V	24V	24V	24V	12V	24V	24V	24V	24V	24V	24V	24V	24V	
Speed regulation type	Mechanical												Electronic			
Including	Radiator, Fan, Starter, charge alternator, Air filter, Muffler, Stop Solenoid, PTO shaft, Fuel Tank, Meter Panel															

## TECHNICAL SHEET

Model	FGVT 32-70-2
Capacity	106 GPM
Head	10.7 bar
H max (Cut off head)	130 mtr
DN	65*65 mm
Speed	2900 rpm
T max	100°C
Power	11kW - 15HP
Casing	Gray cast iron
Impeller	Stainless steel 304
Shaft	Stainless steel 304
Sealant	Mechanical Seal
Bearing	Grease lubrication rolling bearing
Voltage	380/660 V
Protection degree	IP55
Motor winding insulation class	F
Power connection	D.O.L
Current	31.8/18.6
Duty	S1 continuous
HZ	50

## Jockey

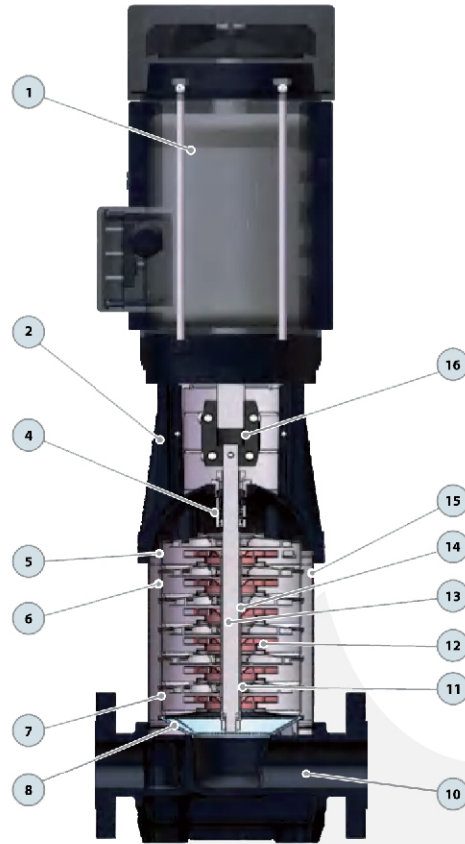
Jockey pump maintains the necessary pressure in the system and make up leakage.



## DESCRIPTION

- The jockey pump is designed to maintain the pressure on the fire fighting piping network pressure system.
- Rated capacity not less than 1 sprinkler flow rate and not more than 10% of main pump flow.
- Discharge pressure sufficient to maintain the desired fire fighting system pressure.
- SS304 vertical, multistage centrifugal pump.
- The suction and discharge ports are on same level.
- FGVT pump head and base are cast iron.
- FGVS pump all wetted parts are in stainless steel.
- Quality bearing and wear resistance mechanical seal.
- Liquid temperature between -10°C and +120°C.

## MATERIAL DESCRIPTION



**FGVT**

No.	Description	Material	No.	Description	Material
1	Motor	IP55 Class F	9	Base Plate	Cast iron
2	Pump Case	Cast iron	10	Inlet&Outlet Chamber	PVT:Cast iron PVS:SS304
3	Seal Base	SS304	11	Bearing	Tungsten Carbide
4	Mechanical Seal	SS304	12	Impeller	SS304
5	Top Diffuser	SS304	13	Shaft	SS304
6	Diffuser	SS304	14	Impeller Sleeve	SS304
7	Support Diffuser	SS304	15	Cylinder	SS304
8	Inducer	SS304	16	Coupling	Carbon Steel





## Controller

The fire pump control panel performs the following functions:

A) Input: Receives signals from alarm devices such as pressure operated switches or remote fire alarm equipment.

B) Output:

- a. Provides electrical power to actuate the motor.
- b. Sends signal to actuate the diesel engine.

C) Monitoring: Monitors the fire pump operation and performance.

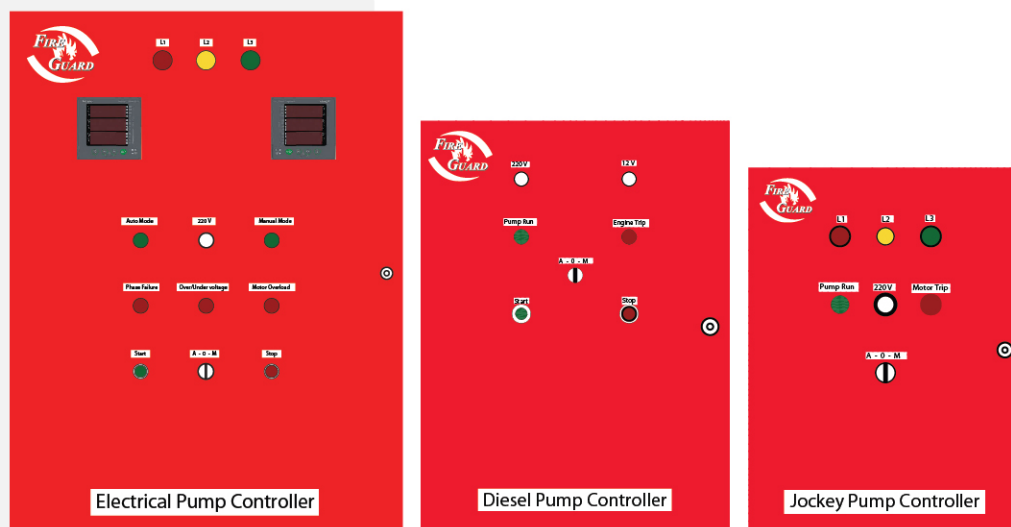
All controllers are completely assembled, wired and tested by the manufacturer before shipment from factory.

The pump consists of three separate controllers; electric, diesel and jockey controllers.

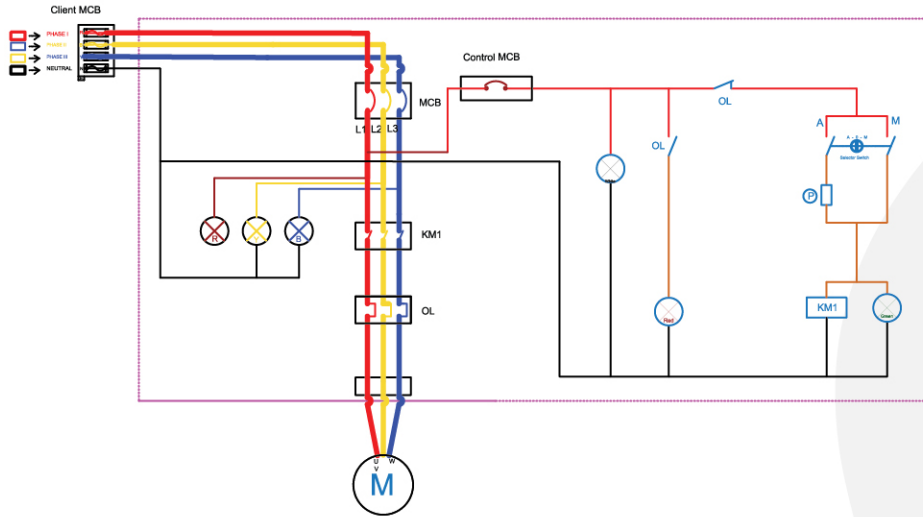
Electrical components such as circuit breaker, switches, relays and other devices dedicated to the operation of fire pumps are SCHNEIDER products.

## DESCRIPTION

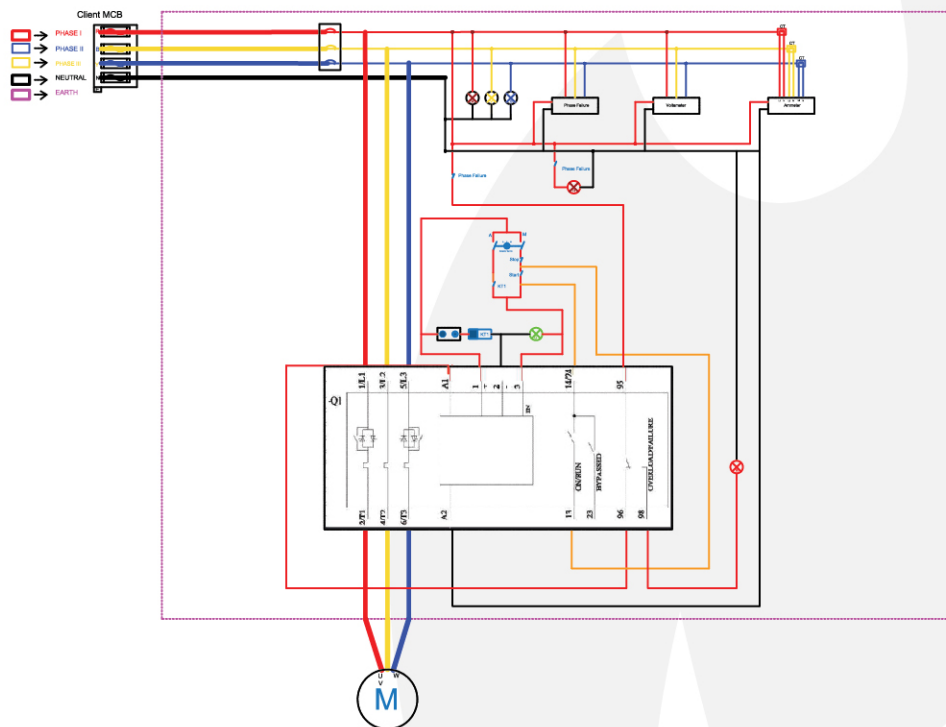
- Equipped with integrated digitalization, and network technologies for precise data measurement, alarm protection, remote control, measuring and communication.
- DOL, Star Delta starter or soft starter based on load or client requirement.
- All controllers are completely assembled, wired and tested .
- Self-acting to start, run and protect the driver.
- Automatic or manual operation options.
- Degree of protection IP55.
- 3 indicating lamp for phase status.
- Available phase failure/phase sequence relay for larger capacity.
- Available ammeter and voltmeter for larger capacity.
- Available over/under voltage relay for larger capacity.
- Custom made design based on request.
- Soft starter for larger capacity or upon request.



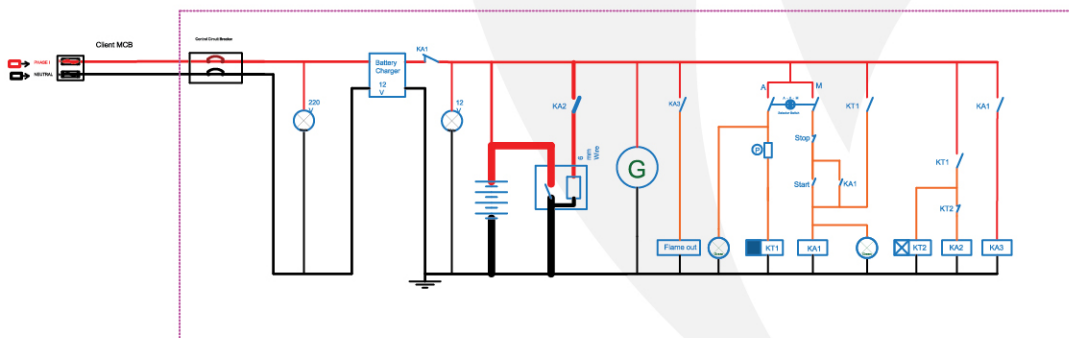
### Jockey Pump Wiring Diagram



### Electrical Pump Wiring Diagram



### Diesel Pump Wiring Diagram

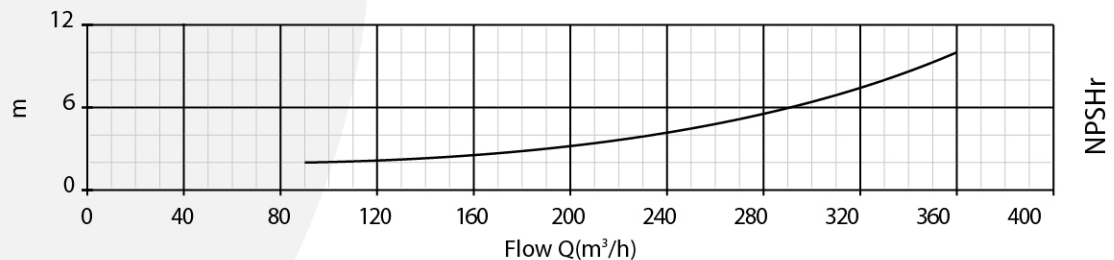
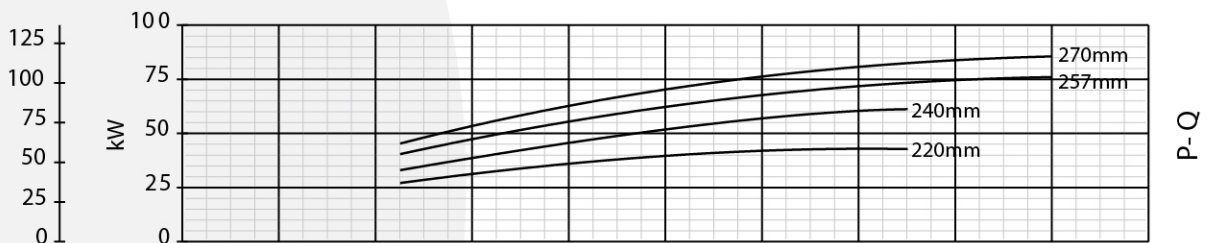
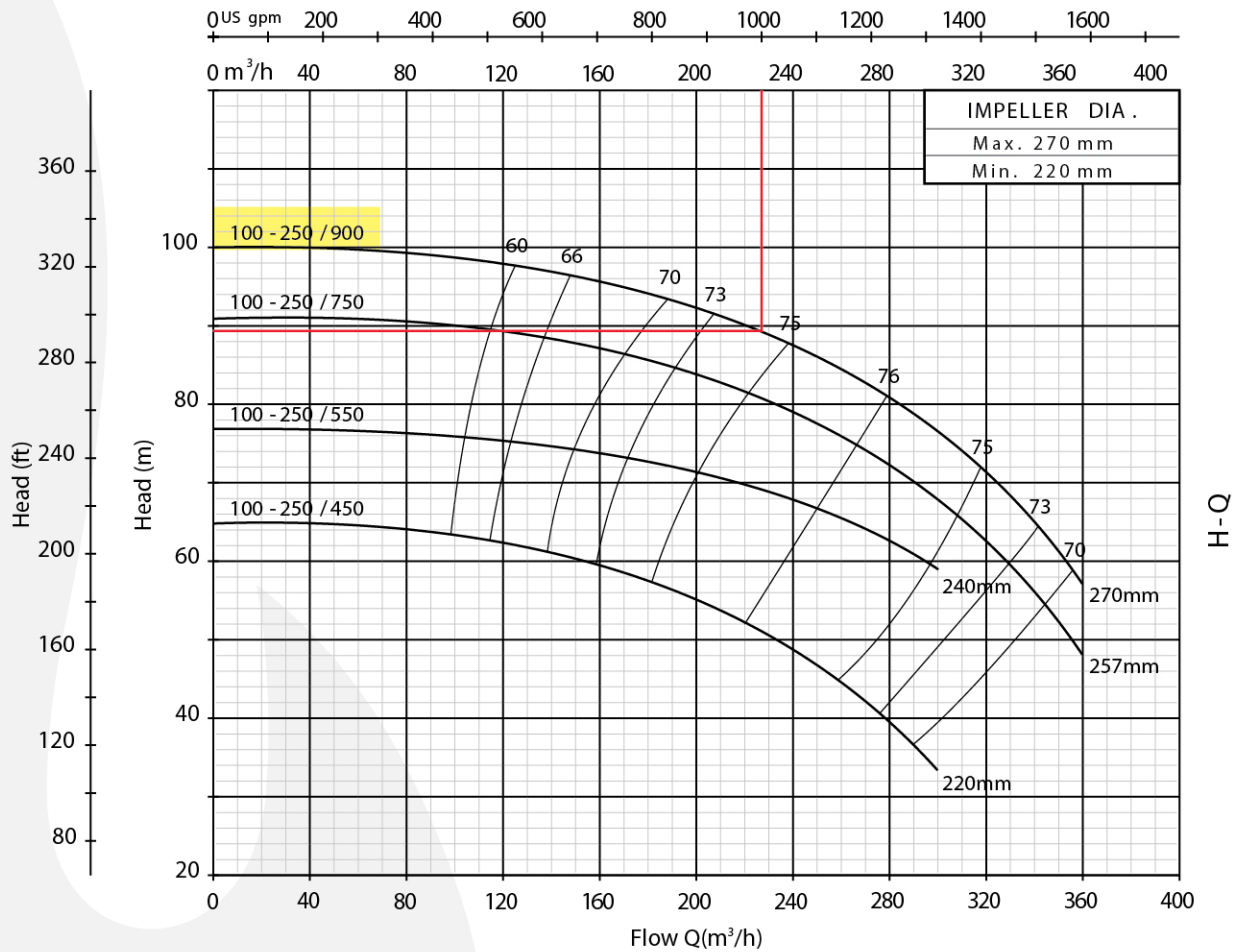




# PUMP SYSTEM



2900rpm





## FGVT 32

2900rpm

