

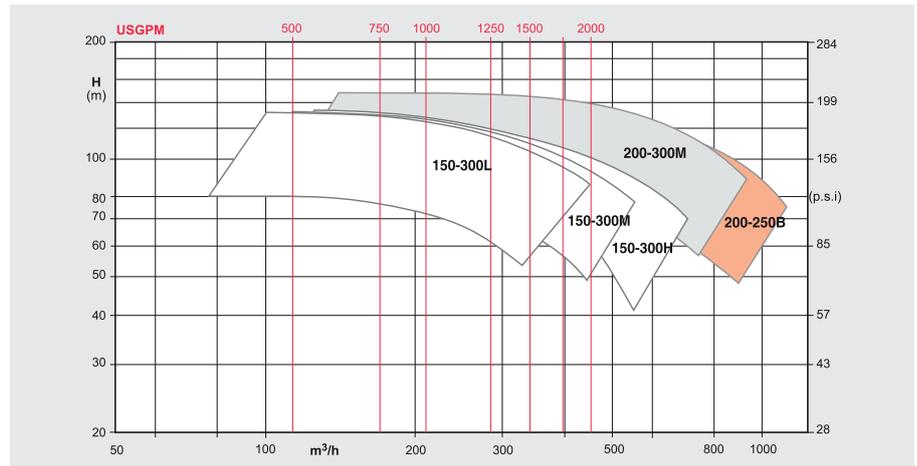


## HORIZONTAL Split-Case Type PDN-PD

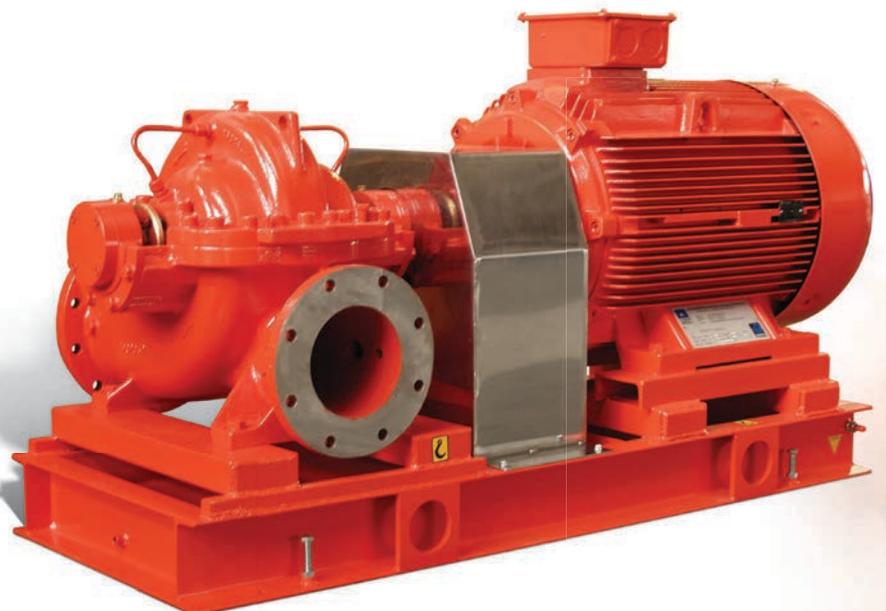


FM Approved horizontal split-case type centrifugal fire pumps are relatively simple to operate and repair. These pumps have a two-part casing divided in a horizontal plane through the shaft center line. They are well suited to fire protection service where a water supply is obtainable under a positive head.

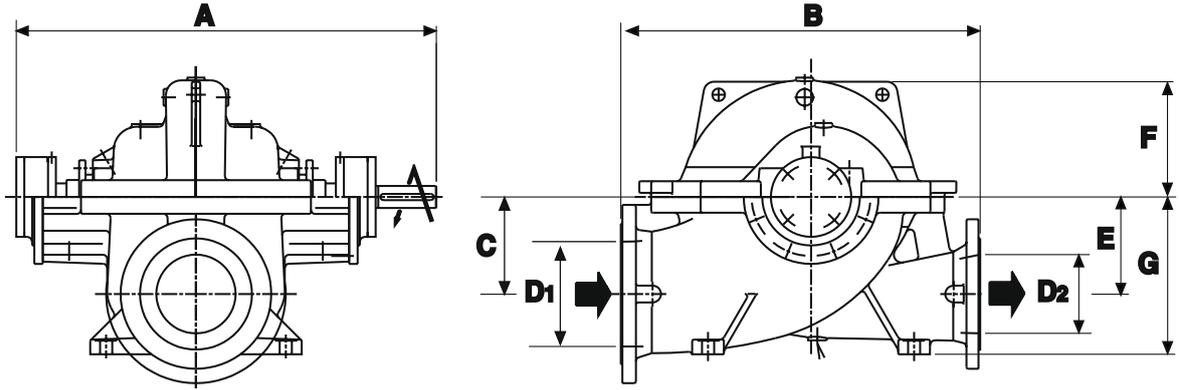
### CHARACTERISTIC PERFORMANCE RANGE



Type	Speed (R.P.M.)	Capacity (US G.P.M.)
PDN 150-300 L	2100 ÷ 3550	750 ÷ 1000
PDN 150-300 M	2100 ÷ 3550	1000 ÷ 1250
PDN 150-300 H	2100 ÷ 3550	1250 ÷ 1500
PDN 200-300 M	2350 ÷ 2970	2000
PD 200-250 B	1460 ÷ 1900	1250 ÷ 2000

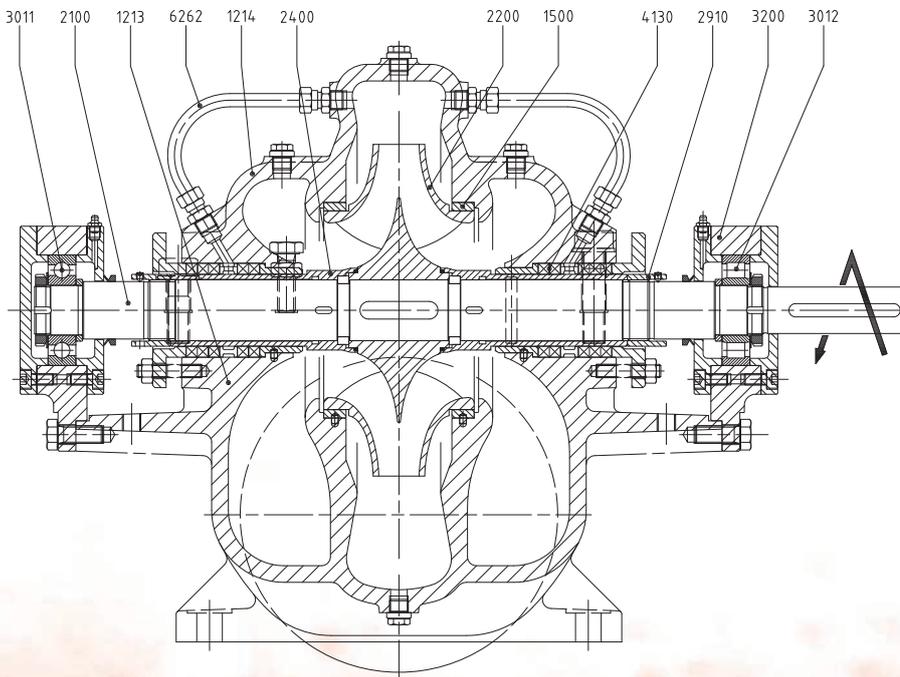


## PUMP DIMENSIONS

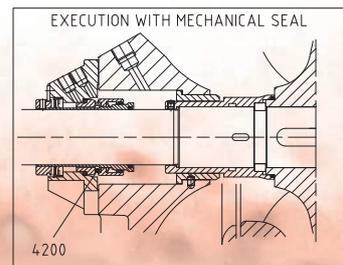


Pump	Dimension (mm)								Weight
	D <sub>1</sub>	D <sub>2</sub>	A	B	C	E	F	G	(kg)
PDN 150-300L	8"	6"	795	680	185	185	220	300	280
PDN 150-300M	8"	6"	795	680	185	185	220	300	280
PDN 150-300H	8"	6"	795	680	185	185	220	300	280
PDN 200-300M	10"	8"	795	760	200	200	237	350	330
PD 200-250B	10"	8"	1280	1030	285	335	460	470	900

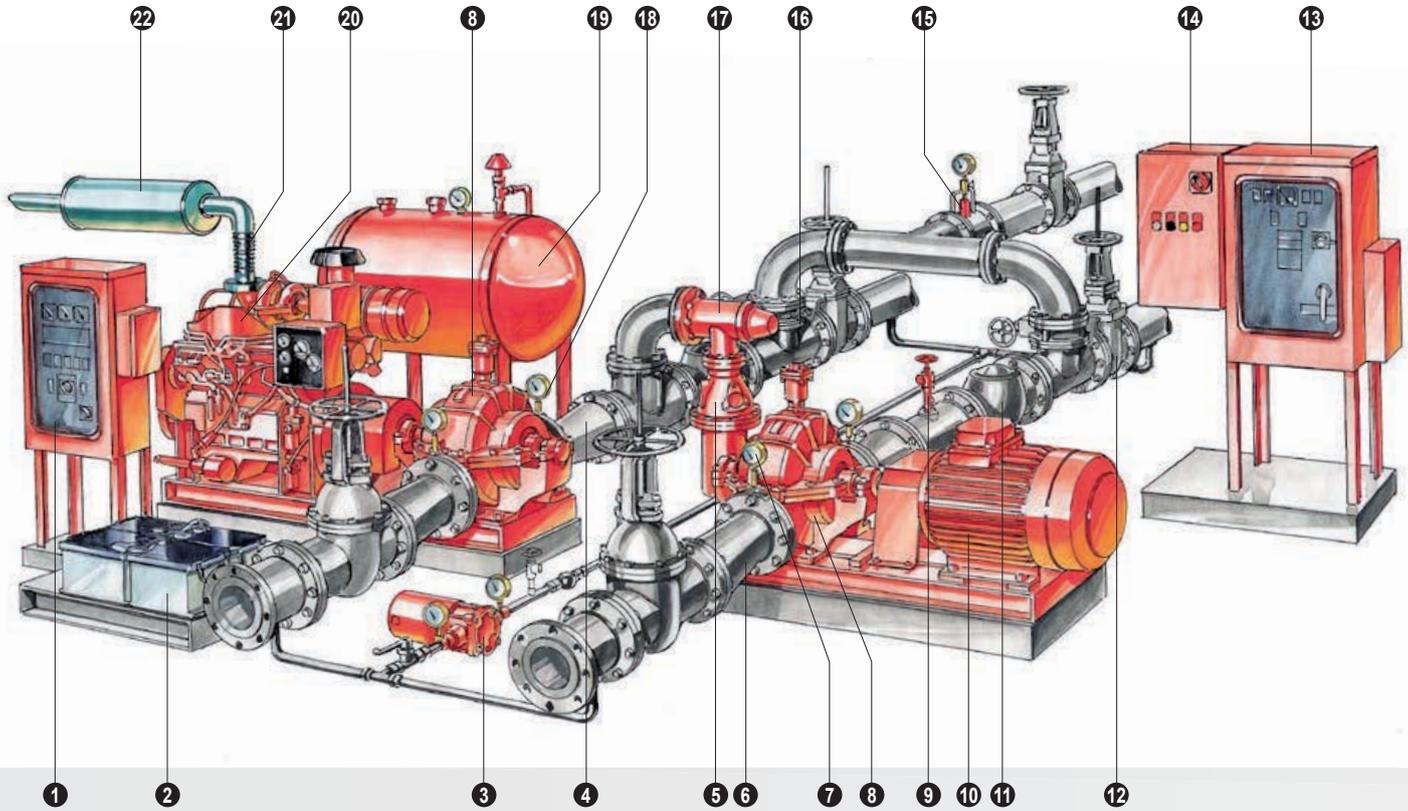
## SECTIONAL DRAWINGS



ref	DESCRIPTION	MATERIAL
1213	Casing half lower	Cast Iron - G30
1214	Casing half upper	Cast Iron - G30
1500	Casing wear ring	Bronze
2100	Shaft	Stainless Steel
2200	Impeller	Bronze
2400	Sleeve	Bronze
2910	Shaft nut	Bronze
3011	Radial ball bearing	-
3012	Radial roller bearing	-
3200	Bearing housing	Cast Iron - G30
4100	Staffing box	Bronze
4130	Gland packing	PTFE
4200	Mechanical seal	On requested
6262	Pipe	Stainless Steel

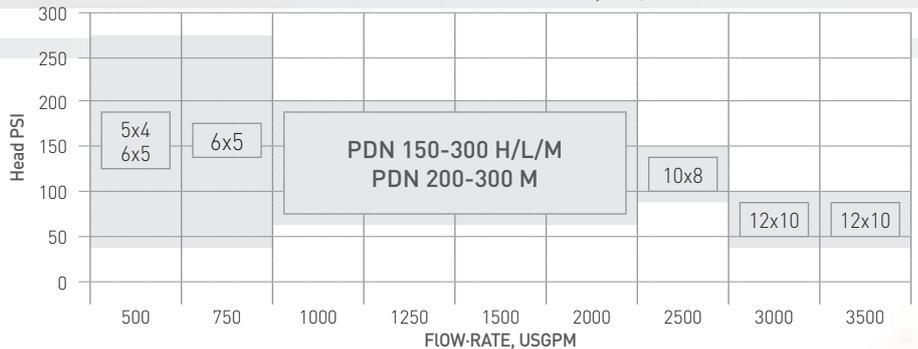


# TYPICAL INSTALLATION OF FIRE-FIGHTING SETS WITH HORIZONTAL PUMPS

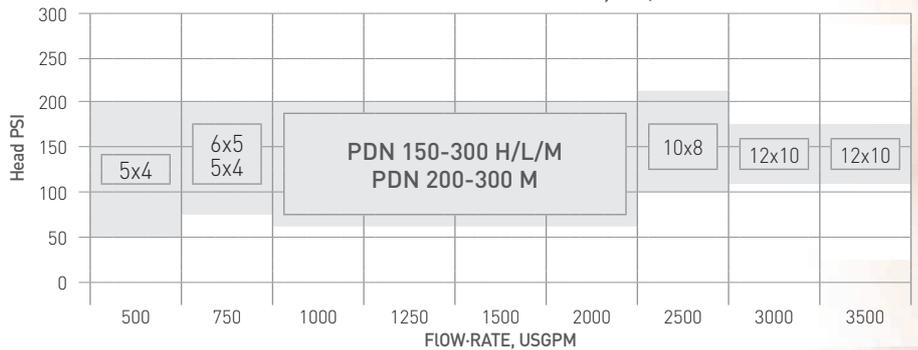


- 1\_Diesel engine fire pump controller
- 2\_Batteries
- 3\_Jockey pump
- 4\_Concentric discharge increaser
- 5\_Enclosed discharge overflow cone
- 6\_Eccentric suction reducer
- 7\_Suction pressure gauge
- 8\_Horizontal pump
- 9\_Circulation relief valve
- 10\_Electric motor
- 11\_Check valve
- 12\_OS& Y gate valve
- 13\_Electric motor fire pump controller
- 14\_Jockey pump controller
- 15\_Tlow est fmeter
- 16\_Automatic air release valve
- 17\_Main relief valve
- 18\_Discharge pressure gauge
- 19\_Fuel tank
- 20\_Diesel engine
- 21\_Flexible exhaust connector
- 22\_Exhaust muffler

HORIZONTAL FIRE PUMPS DIESEL ENGINE DRIVEN, F.M./U.L. APPROVED RANGE



HORIZONTAL FIRE PUMPS ELECTRIC MOTOR DRIVEN, F.M./U.L. APPROVED RANGE



# TECHNICAL SPECIFICATION FOR HORIZONTAL FIRE PUMPS COMPLY TO NFPA 20 AND/OR FACTORY MUTUAL STANDARDS

The set supplied by Audoli & Bertola for fire-fighting service shall include the Pump, driver, controller and fittings in the following technical specifications. The set shall be manufactured according to the standards of the "National Fire Protection Association", section 20.

The materials shall be:

- Factory Mutual Research Corporation (FM) approved
- Underwriters Laboratories (UL) (ULC) listed specifically for fire-fighting service.

All the materials supplied shall be installed as recommended in NFPA 20.

## TEST PERFORMED BY THE MANUFACTURER

Each pump shall be subjected to a hydrostatic test of at least 5 minutes, at a pressure not less than 1.5 times the shut-off head plus maximum suction head and at any event, at a pressure not lower than 250 PSI.

The pump shall be able to deliver 150% of the nominal flow at no less than 65% of head at the working point, and the shut off head shall not exceed 140% of the rated head.

## FIELD TESTS

A field test shall be performed by a suitable flow measuring device.

The test shall be conducted to NFPA 20, by:

- the installer
- the Audoli & Bertola engineer
- at the presence of authority responsible for acceptance release.

## HORIZONTAL CENTRIFUGAL PUMP

The type \_\_\_\_\_ fire fighting pump, dimensioned according to NFPA 20 shall be

- Factory Mutual Research Corporation (FM) approved
- Underwriters Laboratories (UL) (ULC) listed for the following performance ratings:

Q \_\_\_\_\_ m<sup>3</sup>/h \_\_\_\_\_ USGPM \_\_\_\_\_  
H \_\_\_\_\_ m \_\_\_\_\_ PSI \_\_\_\_\_ RPM \_\_\_\_\_  
Suction pressure: \_\_\_\_\_ Bar \_\_\_\_\_ PSI \_\_\_\_\_

Suction pressure at the pump flange shall be not be less than "0 PSI" at 150% of flow conditions.

The fire-fighting pump shall be:

- split case type
- end suction type (DIN 24255)

construction: cast-iron casing and bronze impeller.

packing seal with sleeves (s) of  bronze  stainless steel

Suction flange Dn \_\_\_\_\_ PN \_\_\_\_\_/\_\_\_\_\_ " ANSI \_\_\_\_\_ #  
Discharge flange Dn \_\_\_\_\_ PN \_\_\_\_\_/\_\_\_\_\_ " ANSI \_\_\_\_\_ #

## ELECTRIC MOTOR

The electric motor shall be horizontal foot mounted B3 type, powered at \_\_\_\_\_ V, 3-phase, 50 hz, with rated power of \_\_\_\_\_ kW, with IP 55 protection and F insulation class.

The electric motor shall be mounted on a steel base common to the pump and shall coupled to the pump by means of an elastic coupling equipped with a suitable coupling guard.

The pump and the motor shall be carefully aligned in the workshop.

Correct alignment shall be verified in the field, before the tests, by skilled technicians.

## ELECTRIC MOTOR FIRE PUMP CONTROLLER

The automatic start control panel shall conform to NFPA 20 stds. and shall be

- Factory Mutual Research Corporation (FM) approved.
- Underwriters Laboratories (UL) (ULC) listed for fire-fighting service.

The controller shall be:

- D.O.L. starting type
- Star delta starting type

The controller, of suitable size for the power installed, shall be dimensioned for an interrupting capacity rating of at least 30 kA RMS sym.

It shall be designed for:

- wall (standard) mounted
- floor mounted
- mounted on a common base plate with pump and the motor, with anti-vibration blocks and electric wiring.

## DIESEL ENGINE

The diesel engine shall be horizontal type, comply to NFPA 20 and

Factory Mutual Research Corporation (FM) approved.

Underwriters Laboratories (UL) (ULC) listed

Manufacturer \_\_\_\_\_ Model \_\_\_\_\_

power rated kW \_\_\_\_\_ RPM \_\_\_\_\_

clockwise rotation view from flywheel opposite side.

- water cooled with radiator and fan.
- water cooled with heat exchanger of water cooling circuit in accordance with NFPA 20, consisting of: 4 shut-off valves, 1 pressure regulator valve, 1 pressure gauge, 1 on-off solenoid valve, 2 "Y" strainers, 1 by-pass circuit.

Fitting available:

- Silencer with flexible connection  industrial  residential
  - Set of dual batteries  lead acid  NiCd type
- complete with rack and cables and electrolyte, shipped in separate containers.
- Fuel tank, of \_\_\_\_\_ litre capacity, dimensioned to contain 1 gallon of fuel for each maximum engine power HP, plus 10% for sump and expansion area, complete with the following accessories: filler plug, drain valve, feed valve and filter, flame arrest, flexible hoses connection to the engine, visual level indicator, low fuel level switch and supports for floor mounting.
  - Engine jacket water heater
  - Instrument panel aboard the engine
  - Overspeed device
  - Emergency contactors.

## DIESEL ENGINE PUMP CONTROLLER

The Automatic controller shall conform to NFPA 20 and shall be

Factory Mutual Research Corporation (FM) approved.

Underwriters Laboratories (UL) (ULC) listed

specifically for fire-fighting service.

The controller shall be 220 operating volts, single phase, 50hz, and shall be

equipped with following minimum accessories:

double battery charger, timer for weekly test and discharge solenoid valve, starting pressure switch, pressure recorder, low fuel level alarm.

It shall be designed to be positioned:

- wall (standard) mounted
- floor mounted
- mounted on a common base plate and the motor, with anti-vibration blocks and electric wiring,

## ACCESSORIES

The following shall be supplied in accordance with NFPA 20:

- 1/2" automatic air release valve
  - (Ø3 1/2 - 16 bar) suction and discharge pressure gauge
  - circulation relief valve (electric pump)  3/4"  1"
  - main relief valve  3"  4"  6"  8"
  - enclosed waste cone with glass  3"x5"  4"x8"  6"x10"  8"x12"
  - hose valve test header  4"  6"  8"  10"
- complete with  2  3  4  6  8
- 2 1/2" hose valves with caps and chain  4"  5"  6"  8"  10"
- flow test meter