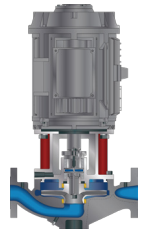


**Specifications for Horizontal Fire Pumps
VI Vertical Inline Type**



GENERAL:

The pumps furnished for fire protection service shall be supplied with the specified drivers, controls and pump accessory items by the pump manufacturer to ensure single source responsibility. The pump, driver and controls shall be:

- ☐ Underwriters Laboratories (UL) Listed
- ☐ Factory Mutual Laboratories (FM) Approved

The pumping equipment shall be installed as recommended in the NFPA 20, Standard for the Installation of Centrifugal Fire Pumps. AMERIFLO Pump model shall be furnished with driver, controllers and accessories as detailed in this specification. Pump manufacturer shall have unit responsibility for the proper operation of the complete unit assembly as indicated by field acceptance tests.

Pump performance requirements:

- ☐ the maximum net pressure for a fire pump shall not exceed 140 percent of rated head
- ☐ inlet pressure less than -6.9 PSI [-47.7 KPA]. A pump shall develop not less than 65 percent of rated total head when discharging at 1-1/2 times rated flow
- ☐ a test is to be conducted with a positive suction pressure sufficient to achieve the maximum brake horsepower
- ☐ the shutoff head shall not be less than 99% of Max head

[Application Standard: UL 448, FM 1311]

MANUFACTURER'S FACTORY TEST:

Each individual pump shall be hydrostatically tested for not less than 5 minutes and run tested prior to shipment. The pump shall be hydrostatically tested at a pressure of not less than 2 times the no flow (shut off) head of the pump's maximum diameter impeller plus the maximum allowable suction head but in no case less than 40 psi.

[Application Standard: UL 448, FM 1311]

FIELD ACCEPTANCE TEST:

A field acceptance performance test shall be conducted upon completion of pump installation. The test shall be made by flowing water through calibrated nozzles, approved flow meters or other such accurate devices as may be selected by the authority having jurisdiction. The test shall be conducted as recommended in NFPA 20 by

- ☐ the installing contractor
- ☐ the owner
- ☐ the owner's representative
- ☐ (other) _____

in the presence of the authority having jurisdiction and with that authority's final approval and acceptance. Failure to submit documentation of factory and field tests will be just cause for equipment rejection.

[Application Standard: NFPA 20]

HORIZONTAL CENTRIFUGAL PUMPS:

The fire pump shall be of horizontal centrifugal single vertical inline with construction specifically labeled for fire service and shall be an AMERIFLO pump model _____. The pump shall be connected to the _____ (fire standpipe) _____ (fire sprinkler) _____ (underground fire main) system. The suction supply for the fire pump shall be from a _____ (public service water main) _____ (elevated storage tank) _____ (ground storage tank) _____ (underground reservoir) at a maximum pressure of _____ pounds per square inch (PSI) and a minimum pressure of _____ PSI. The pump casing shall be ductile cast iron with iron with _____ inch ASME B16.1 ASME B16.1 CLASS 250 rated suction and _____ inch ASME B16.1 CLASS 250 rated discharge flanges machined to American Society of Mechanical Engineers (ASME).

Pump features include:

- ☐ precision investment cast 304 stainless steel impeller
- ☐ vertical inline, centerline discharge casing design
- ☐ 304 stainless steel flush lines and ball valves for packing lubrication
- ☐ factory installed packing leakage drainage piped to a single connection
- ☐ factory installed packing shaft guards
- ☐ sea water materials are available upon request

[Application Standard: UL 448, FM 1311]

ELECTRIC MOTORS:

The pump driver shall be ☐ (UL listed) specifically for fire pump service, horizontal foot mounted, JP-frame, ball bearing induction motor rated for _____ horsepower, 3 phase, ☐ (50) ☐ (60) Hertz with open drip-proof NEMA _____ enclosure for operation on _____ volt ☐ (single) ☐ (three) phase service. The motor locked rotor current shall not exceed the values stated in NFPA 20. The motor shall be mounted on a steel base common to the pump and shall be connected to the pump with a flexible coupling protected by a suitable guard. The fire pump manufacturer shall accurately factory align the pump and motor shafts prior to shipment. After field installation, but prior to grouting the base, a millwright or similarly qualified person shall check and verify for correct shaft alignment.

The motor capacity in horsepower shall be such that the maximum motor horsepower located anywhere on the pump curve shall not exceed the motor-rated full-load horsepower multiplied by the motor service factor.

[Application Standard: UL 1004]

ELECTRIC MOTOR CONTROLLERS:

The automatic electric motor controller shall be ☐ (UL Listed) ☐ (FM Approved) specifically for fire pump service. The controller shall be designed for:

- ☐ across the line
- ☐ reduced voltage, part winding
- ☐ reduced voltage, primary resistor
- ☐ auto-transformer
- ☐ wye-delta open transition
- ☐ wye-delta closed transition
- ☐ auto-transformer
- ☐ reduced voltage, soft

type starting. The controller shall be rated for the horsepower specified in this specification's electric motors section.

The controller shall be capable of interrupting a short circuit current of at least equal to the available short circuit current in the controller supply circuit. This fire pump controller installation requires a withstand rating of not less than _____ amps RMS symmetrical at an operating voltage of _____ volts. The controller shall be:

- ☐ floor or wall mounted for electrical connection to the motor by the equipment installer
- ☐ mounted on a common base with the fire pump and wired to the motor by the pump manufacturer
- ☐ according to NFPA 20 pressure sensing line

[Application Standard: UL 218, FM 1321, FM 1323, NFPA 20]

FITTINGS:

The pump manufacturer shall furnish piping accessory items for the pump installation which will adapt the pump connections to the fire protection system and test connections as follows. Fittings subjected to pump discharge pressure shall be ASME B16.1 CLASS (□150 □250) rating. Fittings subjected to suction pressure shall be ASME B16.1 CLASS 150 rating.

- ☐ eccentric tapered suction reducer
- ☐ concentric tapered discharge increaser
- ☐ UL Listed/FM Approved hose valve test header
- ☐ hose valves with caps and chains
- ☐ UL Listed/FM Approved pump casing relief valve
- ☐ UL Listed/FM Approved automatic air release valve
- ☐ UL Listed/FM Approved main relief valve
- ☐ suction pressure gauge
- ☐ UL Listed/FM Approved discharge pressure gauge
- ☐ with buffer tube and 1/2-inch stainless steel components
- ☐ aluminum, non sparking coupling guard
- ☐ common base level jackscrew adjusting bolts & milled pads at pump & driver locations
- ☐ alignment jackscrews on pump and electric motor (when supplied) locations

