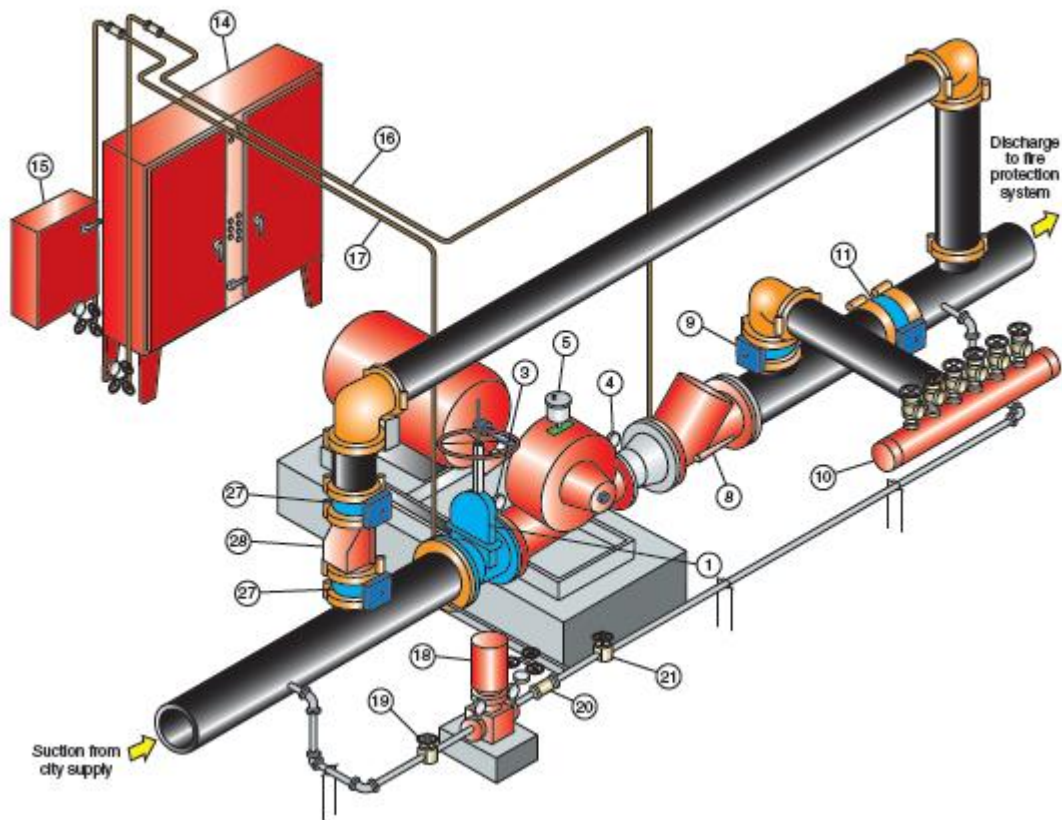




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JOCKEY PUMP

REQUIREMENTS & SIZING - NFPA 20



WHAT IS JOCKEY PUMP?

A pump designed to maintain the pressure on the fire protection system between preset limits when the system is not flowing water.

GENERAL REQUIREMENTS OF JOCKEY PUMP:

- Jockey pump is preferred to be of centrifugal type pumps
- Jockey pump shall be approved but shall not be required to be listed
- The controller for a jockey pump shall be listed but shall not be required to be listed for fire pump service.
- The jockey pump shall not be required to have alternate or standby power.

VALVES OF JOCKEY PUMP:

- An isolation valve shall be installed on the suction side of the jockey pump to isolate the pump for repair.
- A check valve and isolation valve shall be installed in the discharge pipe of the jockey pump.
- Valves and components for the jockey pump shall not be required to be listed.
- The isolation valves serving the jockey pump shall not be required to be supervised.

SENSING LINE:

- Jockey pump shall have its own individual pressure sensing line (15 mm) nominal size made between its discharge check & isolation valve..

JOCKEY PUMP SIZING:

The jockey pump shall be sized to replenish the fire protection system pressure due to allowable leakage and normal drops in pressure and shall have discharge pressure sufficient to maintain the desired fire protection system pressure as followings:

1- FOR SITUATIONS WHERE THE JOCKEY PUMP SERVES ONLY ABOVE GROUND PIPING FOR FIRE SPRINKLER AND STANDPIPE SYSTEMS:

The jockey pump should be sized to provide a flow less than a single fire sprinkler. The main fire pump should start and run (providing a pump running signal) for any water flow situation where a sprinkler has opened, which will not happen if the pressure maintenance pump is too large.

2- FOR SITUATIONS WHERE THE JOCKEY PUMP SERVES UNDERGROUND MAINS:

NFPA 24 permits the underground mains to have some leakage, one guideline that has been successfully used to size pressure maintenance pumps is to select a pump that will make up the allowable leakage rate in 10 minutes or 1 gpm, whichever is larger.

A rule of thumb for sizing jockey pump supplying underground piping is to use 1% of the fire pump rated capacity.

بصورت سرانگشتی برای لوله کشی " دفنی " ظرفیت آن را **1 %** ظرفیت پمپ " اصلی " در نظر میگیرند.

For example:

A fire pump with rated capacity of 1500 gpm.
Then the jockey pump
flow rate is $1500 \text{ gpm} * 1\% = \mathbf{15 \text{ gpm.}}$

JOCKEY PUMP HEAD:

Pressure of jockey pump shall be greater than the pressure of main fire pump by minimum of **10 psi** to avoid false starting of main fire pump.

*** برای جلوگیری از استارت نادرست پمپ اصلی ، فشار " جوکی پمپ " باید حداقل **10 Psi** بیشتر از پمپ اصلی آتش نشانی باشد.

EXAMPLES OF FIRE PUMP SETTINGS:

- i. Pump: 1000 gpm, 100 psi pump with churn pressure of 115 psi
- ii. Suction supply: 50 psi from city — minimum static; 60 psi from city — maximum static
- iii. Jockey pump stop = 115 psi + 50 psi = 165 psi
- iv. Jockey pump start = 165 psi - 10 psi = 155 psi
- v. Fire pump stop = 115 psi + 50 psi = 165 psi
- vi. Fire pump start = 155 psi - 5 psi = 150 psi
- vii. Fire pump maximum churn = 115 psi + 60 psi = 175 psi

REFERENCES OF THIS ARTICLE:

NFPA 20 - 2019 edition (Standard for the Installation of Stationary Pumps for Fire Protection)

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