A jockey pump, or a pressure-maintenance pump, is a small apparatus that works together with a [fire pump](http://www.wisegeek.com/what-is-a-fire-pump.htm) as part of a fire-protection sprinkler system. It is designed to keep the pressure in the system elevated to a specific level when the system is not in use, so that the fire pump doesn't have to run all the time and the system doesn't go off randomly. It can also help prevent the system from damage when a fire happens and water rushes into the pipes. These devices consist of a three-part assembly. In many places, there are governmental guidelines and recommendations for installing these devices to make sure they work properly.

**How it Works**

To understand how a jockey pump works, it's important to understand how a fire sprinkler system works. Sprinkler systems consist of pipes with pressurized water in them and heads that are designed to open when they reach a certain temperature. When the heads open, the [water pressure](http://www.wisegeek.org/what-is-water-pressure.htm) in the pipes drops, since water is flowing out of them. When this happens, a large device called a fire pump starts to send more water through the pipes so that the system can continue to put out the fire.

The purpose of the jockey pump is to keep the water pressure in the pipes within a specific range when there's not a fire, so that the sprinklers won't go off randomly. Since pipes leak, over time, the water pressure inside them automatically goes down. The jockey pump senses this, and then fills them back up to normal pressure. If a fire happens and the pressure drops dramatically, the jockey pump won't be able to keep up, and the drop in pressure will trigger the large fire pump to start sending water.

Secondarily, this pump prevents sprinkler systems from being damaged when the fire pump begins sending water. If a system does not have a jockey pump keeping it pressurized, it may have a relatively low pressure. When the fire pump starts sending highly pressurized water through the pipes, the sudden change in pressure can damage or destroy the system.

#### Assembly

All jockey pumps consist of a pump, a motor, and a controller. The two main types of pumps available are centrifugal and regenerative [turbine](http://www.wisegeek.org/what-is-a-turbine.htm) pumps. Both have their pros and cons: the centrifugal type is often less energy-efficient, but it needs less maintenance than a regenerative turbine one. Likewise, a regenerative [turbine pump](http://www.wisegeek.org/what-is-a-turbine-pump.htm) can create a lot of pressure with very little power, but it can make the system too pressurized, and needs a lot of maintenance. Which type is best for a system also depends on the size of the system, with centrifugal pumps often being preferred for smaller systems, since they sometimes create less pressure.

The type of motor used also depends largely on the size of the system. The two main choices for jockey pump motors are single-phase and three-phase. Both work largely the same way, though single phase motors are typically used for smaller, lower pressure systems since they're not as powerful. Controllers can also be either single-phase or three-phase, and differ primarily in the complexity of their assembly.

#### Requirements

Many places have governmental standards for installing and maintaining jockey pumps. In the US, the National Fire Protection Association's (NFPA) guidelines are the standard. These include things such as the recommended power for a jockey pump in relation to a system's size, how long it can take to repressurize the system, and the pressure that it needs to maintain.