

WATER EJECTORS VERSUS VACUUM PUMPS

Water Ejector Overview

The standard **water ejector** produces the vacuum required to pull air from the chamber through the use of a simple three port device. One port is attached to the chamber drain, the second port is routed to the facility drain, and the third port is connected to the facility water supply. The sterilizer control system signals the facility water “ON” during periods requiring vacuum which produces a Venturi effect within the **water ejector**. Thus, vacuum is drawn on the port connected to the chamber.

The most redeeming feature of a **water ejector** is its simplicity. It is generally capable of producing 25+ inches of mercury vacuum from a 50 psig water supply, but does require in some cases minutes, not seconds, to produce a deep vacuum. The downside of a **water ejector** is it uses a fair amount of facility water which is discharged directly to the drain.

To significantly reduce water going to the drain, PRIMUS developed the PRI-Saver™ Water Conservation System. This system re-circulates water with the use of a small 120vac pump after an initial fill of the stainless steel water conservation tank. Some tempering facility water is automatically added, when required. The PRI-Saver™ typically saves 90% + of the water used by a **water ejector**. It is sold as an option.

Maintenance on a **water ejector** is very minimal as this is a static device (no moving parts).

Electric Vacuum Pump Overview

An **electric vacuum pump** is an efficient producer of vacuum through the use of 3-phase 2Hp to 20Hp electrical power (depending on chamber size) and some facility seal water. Most water sealed **electric vacuum pumps** are capable of rapidly reducing the sterilizer chamber to deep vacuum levels. While the **electric vacuum pump** reduces facility water consumption by 30 – 50% compared to a **water ejector**, it does require 208-480V electrical power and the associated electrical switchgear to operate. PRIMUS recommends an **electric vacuum pump** on chambers of 50-100 cubic feet and larger for more efficient operation. Maintenance costs associated with **electric vacuum pumps** are higher than a **water ejector**, especially when the **electric vacuum pump** needs to be replaced or rebuilt.



DID YOU KNOW?

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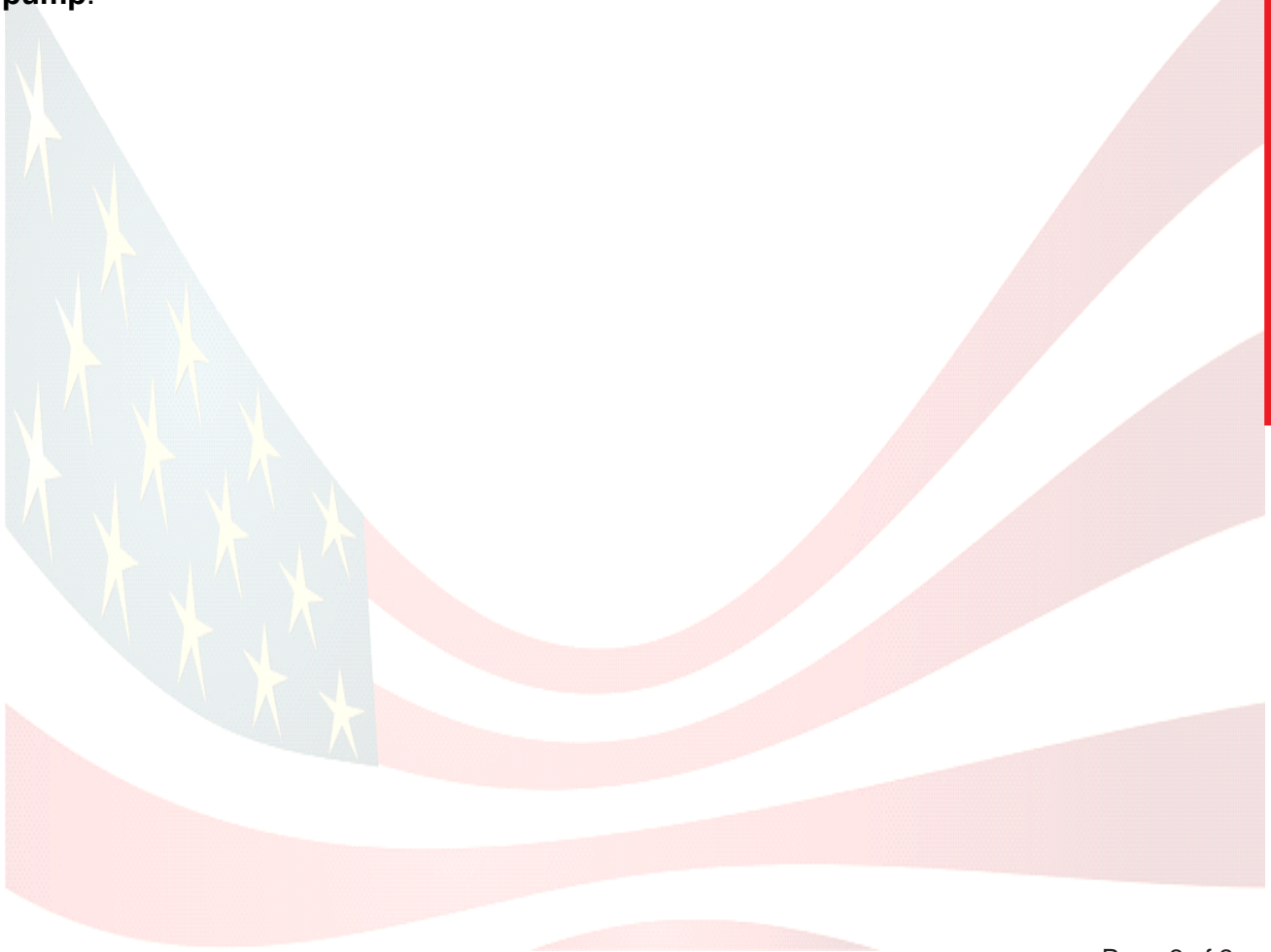
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WATER EJECTORS VERSUS VACUUM PUMPS (continued)

PRI-Saver™ Water Conservation Systems are also available for steam sterilizers using an **electric vacuum pump**.

Selecting a Vacuum Method

Nationally, many facilities opt for the **water ejector** on Small size steam sterilizers. An increasing number of customers are also ordering PRI-Saver™ Water Conservation Systems to help with LEEDS compliance and utility cost reduction. Medium sterilizers are split between **water ejectors** and **electric vacuum pumps** depending on end user preference. Large bulk steam sterilizers are always supplied with an **electric vacuum pump**.



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