

Tsurumi Pump: Reducing Complexity with the A-W System

Automatic Model [A]



Auto-Alternation Model [W]



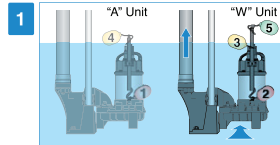
In pump system design, adding capabilities has long meant introducing more components and increased complexity. Tsurumi's A-W system challenges that assumption by embedding automatic and alternating controls directly within the pump. A-W functionality is available within Tsurumi's VANCS™ line of submersible pumps.

The A-W operation integrates key control elements into the pump itself, offering advanced functionality without the need for external panels or additional wiring. The result is a more streamlined system that simplifies installation while improving overall reliability.

The automatic "A" model is designed for standalone operation, essentially plug-and-play. This is enabled by integrated floats combined with a step-down transformer and power relay contained within the motor housing. The only needed adjustment is setting the start float height via a float support pipe and set screw. Once power is provided, the unit operates independently, turning on and off based on the start and stop float levels. By eliminating the need for external controls, the "A" model enables convenient installation with hands-off operation.

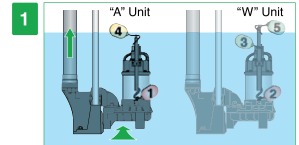
How the Auto-alternation Model Works

Primary Operation



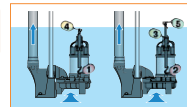
As the water level rises, Float #2 is lifted and activated; however, the pump does not start. When the water level continues to rise and reaches Float #3, activating it, the "W" unit starts.

Secondary Operation



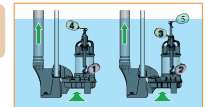
The next time the water level rises, Float #1 on the "A" unit is activated but the unit does not start until Float #4 is activated.

Unusual Increase of Inflow

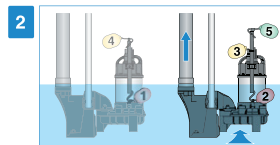


If inflow exceeds the capacity of "W" unit and the water level rises to Float #4, "A" unit starts.

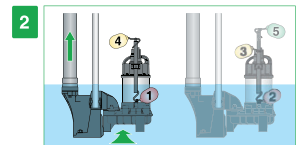
Unusual Increase of Inflow



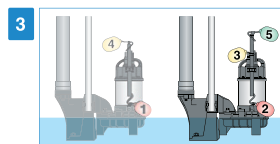
If inflow exceeds the capacity of "A" unit and the water level rises to Float #5, "W" unit starts.



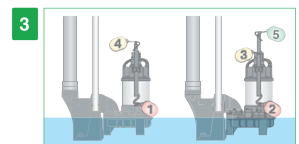
The "W" unit is discharging water (Water level falls).



The "A" unit is discharging water (Water level falls).



When water level falls to Float #2, the float is activated, and the "W" unit stops. The alternating circuitry deactivates the "W" unit for the next level rise.



When water level falls and Float #1 is activated, the "A" unit stops. At the same time, "W" unit becomes ready for operation for the next level rise.

Tsurumi Pump: Reducing Complexity with the A-W System

Tsurumi's A-W System streamlines simplex and duplex pump installations by embedding automatic and alternating controls directly into the pump—no external panels required.

For duplex pumping applications, the auto-alternation "W" model expands on this concept by incorporating solid state alternating circuitry and three floats. When paired with an automatic "A" model, the "W" model runs on every other activation of its middle float. This allows the pair of pumps to alternate operation during normal conditions, balancing wear over time and providing cost and energy savings. For higher inflow situations, an override float activates both pumps to operate in parallel, increasing capacity. All of this is achieved without the use of a traditional control panel.

By integrating control functions into the pump, Tsurumi's A-W operation offers simple operation and user-friendly installation for both simplex and duplex systems.



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ABOUT TSURUMI

Founded in 1979, Tsurumi (America), Inc. is a division of Tsurumi Manufacturing Co., Ltd., a global pump industry innovator since 1924. Headquartered in Glendale Heights, Illinois, the company maintains additional operations in Quebec, Canada; El Paso, Texas; and Salt Lake City, supporting customers across North America. Globally, Tsurumi operates in more than 45 countries, delivering reliable pumping solutions for construction, civil engineering, mining, industrial and municipal wastewater, sewage treatment, flood control, and landscape applications. Tsurumi products are backed by independent, third-party verification and supported by a robust distribution network and one of the largest on-hand inventories in North America.