



AW-LAKE
PROCESS FLOW MEASUREMENT



APPLICATION SPOTLIGHT

Accurate Availability of Water for Amusement Park Rides



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APPLICATION:

When constructed 40 years ago, Florida amusement parks installed a variety of pumps to supply water to water features and rides. Many parks did not use dedicated flow meters to ensure the correct availability of water for rides. Those that were installed fell out of use over time. To determine flow rates, operators relied on pump curves supplied by manufacturers. Over time, water supply requirements were not met by relying on pump curves. Assessing the situation, a pump expert recommended using flow meters to evaluate pump conditions in making necessary pump modifications or replacements.

PRODUCT SUPPLIED:

- **Portable Ultrasonic Flow Meter (Model CUTT-P) with sensors to measure ½" to 48" pipes.**

CHALLENGES:

A pump contractor determined that without accurate water flow rate measurement, it was nearly impossible to evaluate a pump condition based on pump curves. At best, the amusement parks could guess which pumps should be replaced, rebuilt, or modified. As most water lines are between 8 to 24 inches, installing a permanent measurement method would be very expensive. The parks needed a cost-effective and flexible flow measurement method to solve the problem.

SOLUTION:

The contractor compared the costs and feasibility of several types of flow meters to measure several dozen large lines quickly and at a low cost. AW-Lake provided a quote on its Portable Ultrasonic Flow Meter (CUTT-P) that offered non-contact flow measurement and user-friendly operations. The ultrasonic transducers clamp on the outside of pipes and could be quickly removed and reinstalled. Setting up at a new location normally take less than 10 minutes. Units are compatible with any metal or plastic material including steel, carbon, concrete-lined ductile iron, PVC, fiberglass, and more.

When evaluating the CUTT-P Flow Meter, the contractor liked its' battery-powered operation, quick installation, and onboard data logging capability with up to 16 million bits of data. A built-in keypad and simple menu also enable fast and easy programming of pipe diameter, material, liquid type, and measurement units. The flow meter could remain in place for a full day to provide performance over a working interval. An IP67 (NEMA 6) rating allows for safer operation during temporary periods of submersion.

AW-Lake delivered the unit in two to three weeks. It became operational on the first measurement point several minutes after on-site receipt. Of the four meters initially tested, one operated at 30% of rate flow, two at about 60-65% and the fourth at about 80%. These readings can be used to determine which units are in the greatest need of repair or replacement.



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RESULTS:

Based on the output provided by the flow meters, the pump expert and facilities composed a priority list of repairs, replacement, or simple maintenance to achieve the needed pump performance. The ability to move and install meters without modifications minimalizes labor costs and reduces downtime. Individual amusement parks are now looking to purchase their units because of the ease of installation and instant measurement.

