



Superior performance under demanding conditions

OMNIFLO® SEQUENCING BATCH REACTOR (SBR) MAX WITH JET TECH TECHNOLOGY

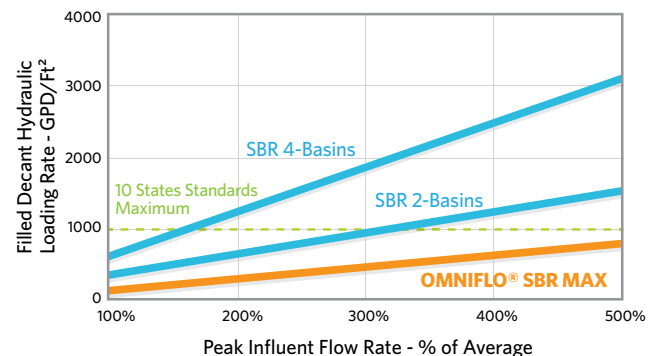
The OMNIFLO® SBR MAX with Jet Tech technology is a true-batch SBR process designed to handle greater peak flows or storm flow events while providing superior effluent quality at a lower cost.

Operating Principles

In conventional SBR systems, individual reactors are filled with influent wastewater sequentially and operated in a batch treatment mode. Several times daily, each reactor cycles through five discrete periods: Fill, React, Settle, Decant, and Idle. This operational configuration can provide beneficial process advantages for microbial kinetics, treatment efficiency, and SBR basin volume reduction. Evoqua's OMNIFLO SBR with Jet Tech technology has been one of the most technologically advanced systems available for more than 30 years with 700 installations around the world.

All wastewater treatment systems are challenged by peak influent flow rates. In SBR systems, this necessitates either expensive flow equalization capacity or a problematic overlap in the Fill and Decant periods. High influent flows interfere with the sludge blanket while treated effluent is decanting, which can increase the potential for effluent excursions. The OMNIFLO SBR system mitigates this challenge with an influent velocity dissipation manifold across the basin floor. Even with this design very high peak flows (>3xADWF) impose excessive localized hydraulic loading rates (gpm/ft²) that can be problematic for any SBR system.

Hydraulic Loading Rate During Filled Decants, GPD/Ft²



Conventional SBRs suffer from excessive influent velocity during storms. The OMNIFLO MAX fixes this issue by reducing hydraulic loading rate to as little as 17% of conventional SBR systems.

Benefits

- Treatment of storm flows while maintaining excellent effluent quality
- Quiescent settling is preserved at all flow rates up to storm flow
- Influent velocity dissipation prevents sludge disturbance and short-circuiting
- No need for additional EQ basins or oversized reactor basins
- Simple automated controls make necessary adjustments

Innovation and Process Expertise

Evoqua's OMNIFLO® SBR MAX system solves this hydraulic limitation with its unique ability to handle both peak influent flows and a wide range of organic loads and industrial pollutants. Unlike other batch reactors, the OMNIFLO SBR MAX system welcomes peak flow events. Why? Upon detection of a serious flow surge the system automatically adjusts its cyclic operation to dissipate the surging influent flows across all SBR basins simultaneously. In a typical 4-basin SBR, this simple strategy reduces the hydraulic loading rate to 25% of that in a conventional SBR - thus ensuring a clean decant regardless of the storm intensity. All of the uniquely effective SBR process advantages of Evoqua's OMNIFLO SBR system are retained in the new OMNIFLO SBR MAX.

Despite offering greater treatment capacity, the OMNIFLO SBR MAX also offers a significant capital and operational cost savings versus conventional SBRs. Each basin is designed to receive only a portion of the peak flow, so the piping sizes (influent, effluent, and in-basin) have also been reduced along with the associated valves, distribution manifolds and decanters.

Simple Operation for Superior Results

Evoqua's advanced control system features a technologically advanced PLC with a simple operator interface that is manually adjustable. During operation, the control system automatically contours the SBR process and responds to influent flow rates and monitors equipment operation. In the event of equipment failure, an alarm will alert the operator and take corrective action.



The OMNIFLO SBR MAX control system automatically adjusts to the flow coming in, giving the operators the best of both worlds: true-batch handling at design flow and optimal hydraulic handling at storm flows.

Many Footprints. One Clear Result.

Evoqua's SBR systems with Jet Tech technology turn wastewater treatment challenges into cost-effective, energy efficient solutions through simple operation, design flexibility, and the expertise of our biological process experts.

Evoqua offers municipalities and industries a range of SBR systems, from the large capacity OMNIFLO SBR to the more compact OMNIPAC® SBR field-erected treatment plant and GoFlo™ Continuous Fill Batch Reactor. From widely varying flows to the retrofit of existing basins, our technology and collaborative approach provides exceptional flexibility.



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