



LOOP Brush Aerator for Premium Oxygen Transfer and Mixing

Smith & Loveless' horizontal **LOOP** Brush Aerators provide premium oxygen transfer and mixing over a wide range of flow conditions. Our experience with wastewater treatment equipment enables Smith & Loveless to manufacture the **LOOP** Brush Aerator for the greatest efficiency and cost-effective service. Because the **LOOP** Brush Aerator is available in a wide range of sizes, it is ideal for municipal and industrial wastewater applications.

LOOP Design Features:

- Keyed, tapered bushings eliminate shaft fatigue failures associated with welded stub shafts.
- Staggered blade position and design prevents pulsing shock loads on the unit's drive train.
- Provides premium oxygen transfer and mixing over a wide range of flow conditions.
- Blade removal or replacement easily accomplished in the field.
- Aerator torque and other component parts finished with protective **VERSAPOX**® epoxy resin coating after steel grit blasting.



The LOOP is an acronym derived from Low Operation cost Oxidation ditch Plant.

- Units available in lengths up to 30 ft. (9.1 m) offer flexibility in providing a wide range of oxygen transfer.
- Smith & Loveless uses the strongest shaft materials in the industry.
- Optional weir system effectively controls the aerator's immersion in the wastewater, allowing for increased oxygen transfer rates when required.
- Optional patented turning baffles insure proper velocity throughout the entire cross-section of the channel.

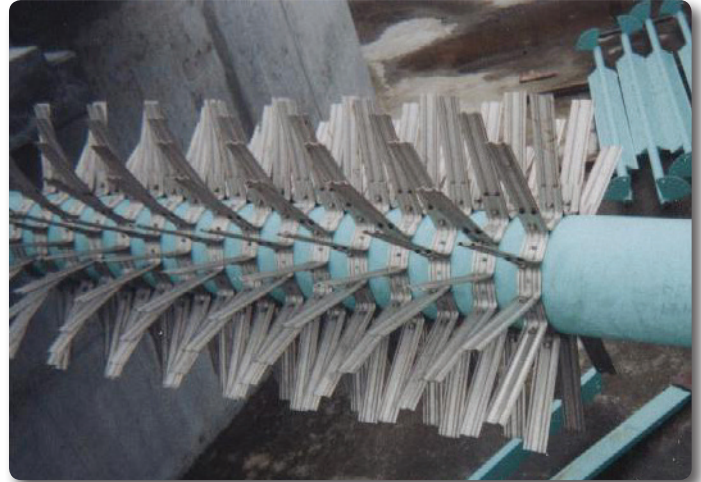
Blade & Torque Tube Design

The **LOOP** Brush Aerator's blades are aligned so that only every other row of blades hits the wastewater at any given instant, eliminating shockloads on the entire drive system.

The 3 in. wide (7.62 cm) blades are designed for impact loads and have been designed with a safety factor of 5:1. The bolt-together construction eliminates the stress potential in the torque tube created by welding. Smith & Loveless uses two reinforcing ribs running the full length of the blade.

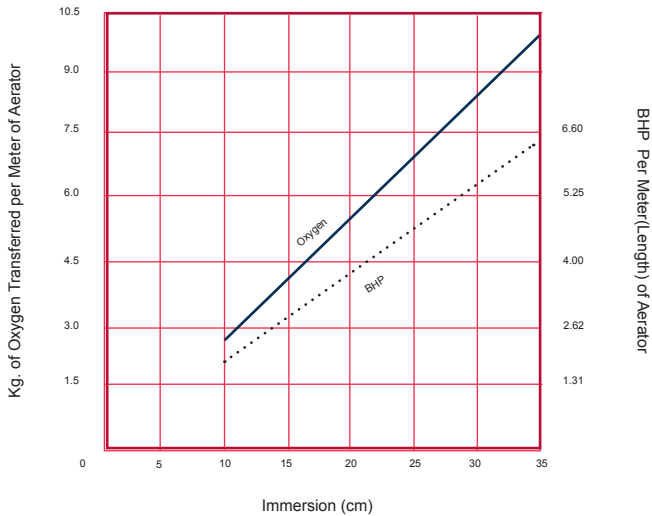
The torque tube features a 14 in. (35.6 cm) diameter offering the potential for a submergence of 14 in. (35.6 cm).

A keyed, tapered bushing mounts the gear reducer to the rotor shaft. Attaching the reducer to the rotor shaft with tapered bushings eliminates the potential for movement associated with set screw type connections.



The shape of the individual blades on the **LOOP** form a modified "J" shape measuring 14" (35.6 cm). The blade design allows for a submergence range of 0' (0 cm) to 14" (35.6 cm).

Operation Chart



This **LOOP** Treatment Plant consists of three oxidation ditches and is capable of treating peak flows of 5.5 MGD (20,817 m³/d). Its sister plant consists of 5 ditches which treat peak flows of 19.5 MGD (73,807 m³/d). The heart of these oxidation ditch treatment systems is the Smith & Loveless **LOOP** Brush Aerator.

