Aeration Testing

State-of-the-art facility and technology

Designed for testing all mixing processes from beaker-size to scale-up tanks to true full-scale aeration testing in the 750,000 gallon indoor basin, the R&D lab is available to provide results of equipment upgrades, process improvements, and comparative studies. All results and test data are shared with customers and analyzed with the application engineer staff to ensure the data is understood and all options are explored.

Broadest experience evaluating the widest array of aeration technologies from mechanical (in virtually all its forms) to diffusion - making the unknown known.

All testing performed to ASCE guidelines for clean water aeration testing ensures objective comparison of alternate technologies taking the guess-work out of the design process - dispelling myths.

Standardized testing provides foundation for projecting “rea world” performance to accurately predict effluent results - reducing the risks.

PHILADELPHIA MIXING SOLUTIONS, Ltd.

Phone: 1-800-95-MIXER (1-800-956-4937)
Phone: ++44 01635 275300
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MIXING SOLUTIONS LIMITED

1221 E. Main Street · Palmyra, PA 17078 · Phone: 717-832-2800 · Fax: 717-832-1740 · www.philamixers.com

PEOPLE

PROCESS

PRODUCTS

PERFORMANCE

HALO

with TALON™ Configuration

The Philadelphia Mixing Solutions, Ltd. (PMSL) HALO™ System has emerged from time proven installations of our extended aeration closed loop reactor process. PMSL is uniquely qualified to provide the HALO™ system due to it’s unmatched ability to provide true aeration performance in an economical package.

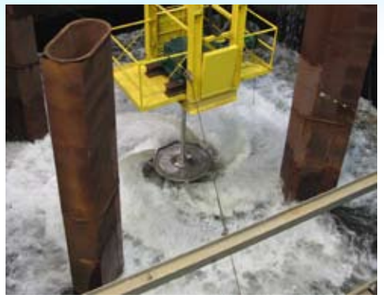
PHILADELPHIA MIXING SOLUTIONS, Ltd.

Providing SOLUTIONS to optimize your mixing operation.

Halo™ & Talon™ Configuration System

A Superior Performance in Water

The HALO™ system draws on 50 years of Philadelphia Mixing Solutions, Ltd.'s mechanical and process knowledge. With its full scale "university grade" (up to 750,000 gallons) testing facility and process knowledge, Philadelphia Mixing Solutions, Ltd. provides efficient biological nutrient removal (BNR) that you can count on.



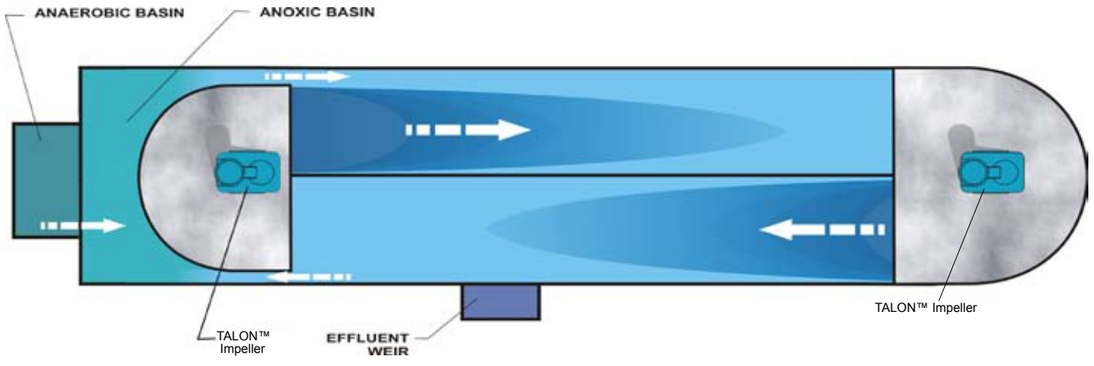
The HALO™ with the Talon configuration introduces the next generation advancement on the AeroPhoil design. After 30 years of proven installations, the patented Talon impeller is the most technically advanced Low-Speed Surface Aeration (LSSA) Impeller available today. Capable of continously providing the horizontal velocity required in ditch applications, it also ensures the biological components of the ditch receive the oxygen required to treat the bio-solids.

Some Benefits of the Halo and Talon Configuration:

- Energy efficient design provides up to 25% greater oxygen transfer than the nearest competitor's offering.
- Standard Aeration Efficiency up to 4.5 lbs 0_2/hp hr
- Variably-pitched, parabolic-cambered, hyper-raked, skewed design.
- Extensively tested and proven with FEA, CFD, and the world's largest R&D testing lab.

Flexible, Adaptable, Options

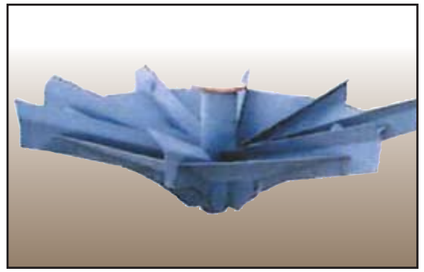
Can be retro-fitted to any existing mixer drive. Available in varied materials and coatings to meet specific applications & designed to operate at varying liquid levels. Can be designed for any basin requirements.



Talon™ Side-By-Side Comparison

The Right Solutions Ensures System Reliability

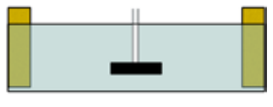
PMSL Talon Impeller



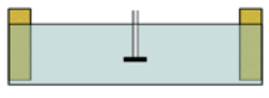
Competitor's Impeller

CONTROL SYSTEM	Transfer up to 25% more oxygen than similar aeration techniques.	25 year old technology works.
MIXING	Creates better mixing due to a higher tangential component of velocity.	At least 15% LESS pumping capacity.
LIQUID LEVEL SENSITIVITY	Operates over a larger range of liquid level variations.	Narrow range of liquid level variation. Poor at handling storm surges.
TURN-DOWN CAPABILITIES	Maintains transfer efficiency over a range of speeds.	Maximum transfer only achievable at maximum speed.
ANOXIC IMPELLER	Low shear hydrofoil that creates no surface turbulance and draws less power.	Rushton impeller designed for gas dispersion, draws over 15 times more power.
WARRANTY	Included.	Unavailable.
TECHNOLOGY CENTER	State-of-the-art 30,000 ft 2 facility with 750,000 gallon test tank with 4 full-time personnel.	Minimal test lab facility.

Impeller Diameter-to-Tank Diameter ratio (D/T) is critical. A small impeller in a large reactor will not provide effective mixing at the tank extremities. Mixer pumping capacity is an important consideration for biosolids suspension applications. Big impellers at slow speeds move more water than small impellers rotating at fast speeds and mixer rotating at high speeds induces more shear.



PMSL Selection:
Mixer 2HP
Impeller Type: 112"
Low Shear Hydrofoil
Speed: 16.5 RPM
Off-Bottom Distance: 48"



Competitor's Selection:
Mixer 10HP
Impeller Type: 48"
Pitch Blade Turbine
Speed: 68 RPM
Off-Bottom Distance: 60"