

Helios Tube Cleaning System[®]

Increase energy efficiency
in chiller operations.



Helios TCS® Eliminates the century old problem of chiller fouling.

Background

The magnitude of shell and tube fouling as an energy waster is one of the least understood costs to our economy. Commercial buildings account for nearly 40% of total energy consumption in the United States and of that up to 50% of their energy is consumed by HVAC systems. More than ever, leaders are focused on system optimization to enhance cost performance, optimize resource consumption and improve environmental health.

In the commercial and industrial sectors, chillers are foundational for HVAC services and process cooling. Water cooled chillers are incredibly effective, but they suffer from endemic tube fouling preventing their complete optimization. Historically, fouling in tubes causes up to 30% efficiency loss. It has been tolerated and mitigated by manual cleaning by operators for over a century because there was no solution. Until now.

The award winning Helios TCS represents the breakthrough solution eliminating efficiency robbing fouling and all its problematic effects through mechanical and fully automatic preventative cleaning.

Leadership

Innovas Technologies has spent the last decade building products that empower our customers to overcome operational problems that slowed their own path to excellence. Industry leading Innovas is devoted to the success of our customers through quality, service and product development meeting the most rigorous life cycle requirements. Leading design, quality, service and operational support ensures success.

It Boils Down to Results

Innovas' customers operate sophisticated, best practice plants, so they will tolerate nothing short of excellence and consistent performance. The Helios meets the challenge by demonstrating a 99.97% reliability rate proven through the millions of run hours and cycles in demanding environments. Efficiency results? The average efficiency gain for Helios equipped chillers exceeds 8%. A powerful tool for the operator seeking optimal performance from their chillers.

TO LEARN MORE ABOUT THE HELIOS TCS
CONTACT SALES AT +1 (877) 897-6564.



Reliability

The Helios TCS install base has operated millions of hours with a demonstrated reliability rate exceeding 99.97%. Built specifically for reliability Innovas Technologies adheres to all of the cornerstones of quality including design, service, rugged build and adoptions into the product of process learning. The goal? The Helios System is designed to exceed the life of the equipment it serves.



Environment

Shell and tube heat exchanger fouling, including chillers, represents one of the largest under-addressed causes of energy waste in existence.

Tellingly, the average chiller in the United States operates at a compromised rate losing between 5% and 25% efficiency due to fouling.



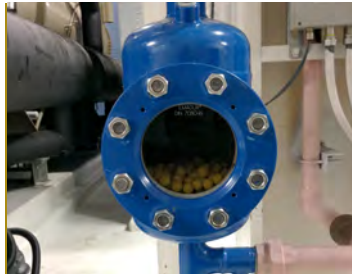
Sustainability

With over 300,000 chillers in the US, the waste equals 10's of millions' in tons of excessive greenhouse gas emissions.

The Helios Tube Cleaning System® eliminates the entire problem, offering a unique solution to achieve sustainability targets and reduce environmental impact.

Built to last, built to perform.

Designed and built in the United States, the Helios TCS system is constructed to thrive in the most challenging environments. Fabrication precision and component quality are keys to building an ultra-reliable system meant to last.



ZERO MOVING PARTS

NO PROCESS INTERRUPTION

No moving parts located in the chiller water flow means no interruption to chilling process for service or maintenance.

Improved Serviceability

Configurable ball change reminder provides notification to operators when a ball change is due. Optional ball trap service ports enable quick and easy inspection or cleaning without removing entire ball trap cover.

INTUITIVE CONTROLS

ADAPTIVE USER EXPERIENCE

Four-color touchscreen HMI allows operators to easily monitor system operations and adjust control settings as needed.

Personalized Controls integration

Helios PLC can be provided with either BACnet or MODBUS communications module for integration with facility systems. Facility-specific equipment names (CH-1, etc.) can be programmed to match facility nomenclature.

CUSTOMIZABLE

DESIGN-BUILD SOLUTIONS

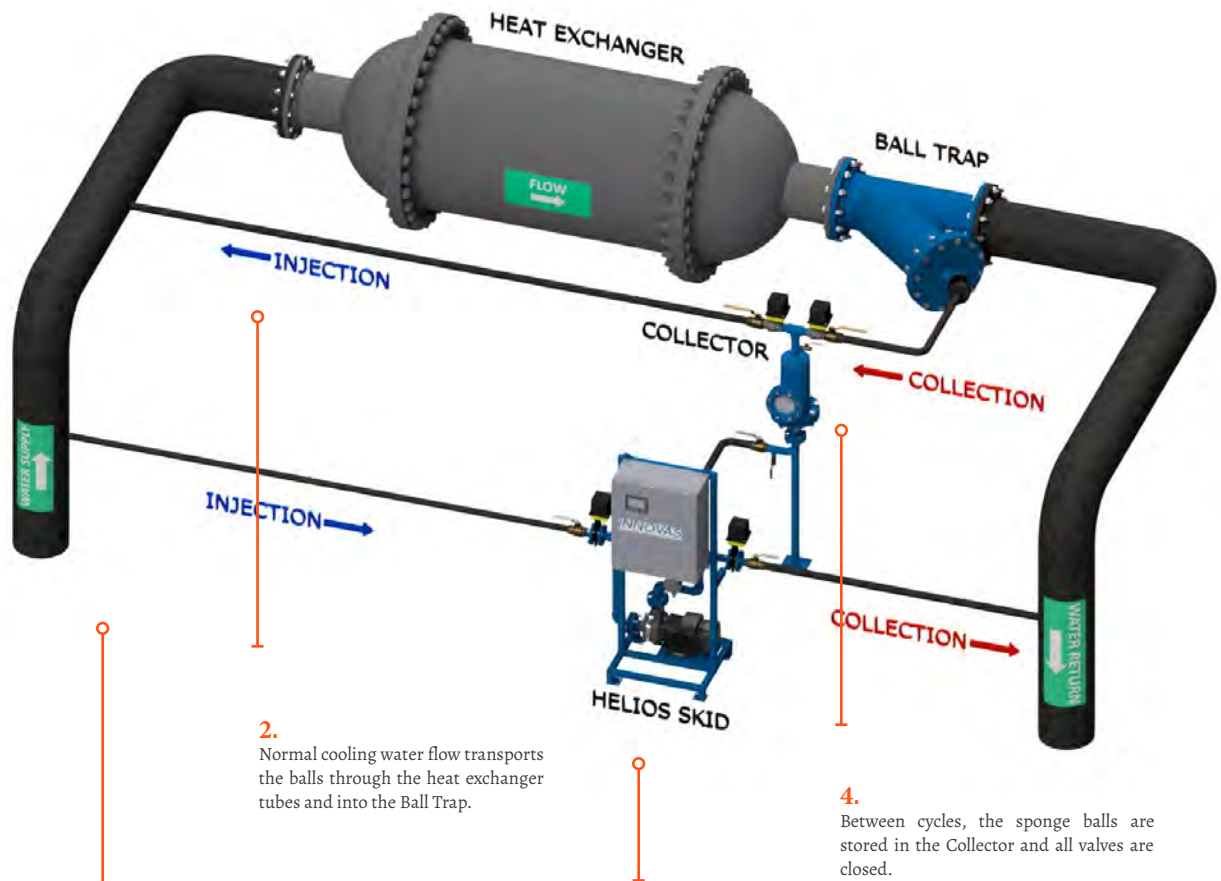
Ball traps available in a variety of configurations to fit any existing pipeline geometry. Custom design-build solutions available.

Modular Expansion Capability

Helios Skid controls and pump can be expanded to service up to five heat exchangers, allowing for simple forward-fit to additional chillers as needed.



Coupled with robust controls designed to interface with your systems for reliability but also embrace growth avenues for your future innovations.



1. At programmed intervals, the Controller commands the injection valves to open and pump to start, and the balls are injected into the heat exchanger inlet line.
2. Normal cooling water flow transports the balls through the heat exchanger tubes and into the Ball Trap.
3. The Controller then prompts the collection valves to open and pump to start, and the balls are returned to the Collector, where they are held until the next injection/collection
4. Between cycles, the sponge balls are stored in the Collector and all valves are closed.

HOW DOES THE HELIOS SYSTEM WORK?

The Helios Tube Cleaning System continuously cleans heat exchangers by circulating sponge balls through the heat exchanger tubes at programmed intervals, preventing residue, deposits, and bio-film from accumulating in the tubes. The sponge balls are slightly larger in diameter than the tubes, and wipe the tubes clean as they pass through. The balls are then trapped on the outlet side of the heat exchanger where they are collected, transported, and stored until the next cleaning cycle begins.



The Helios cycle is fully automatic and controlled by a programmable controller. The Collector can be easily and quickly isolated from main system for rapid change of cleaning balls with minimal effort.



The Value Foundations

From the enterprise level down to small business, the essential element for any investment is that it provides value. Specifically, we view building value through the lens of Life Cycle Value Stream (LCVS) so that our products perform comprehensively, measurably and with longevity in our customers' businesses.

Built for LCVS performance in serious companies. The Helios is built to serve as a reliable performing asset generating value in multiple areas: Energy, labor, process reliability, longevity, feedback and evolves to serve as a trusted diagnostic tool in your network.

Most importantly, we want the Helios to become part of your story about making things better. Saving energy, reducing work load, improving your plant resiliency and of course, increasing your contribution to improved sustainability. Your story, your work, is important and Innovas Technologies can help add success to your journey.

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The Helios contributes an impressive Life Cycle Value Stream that offers energy savings, reduced maintenance, enables peripheral systems lifespan extensions, sustainability contributions, water savings, information feedback, reliability in associated processes, simplifies processes, high rate of return, opportunity for reduction in water treatment chemicals, data expandability, and a low cost of operation.



Energy & Water Savings

The Helios delivers more than 8% improvement in chiller efficiency. This factor grows when degraded water or other above average fouling factors are presented. Energy costs money and when the Helios is implemented, it normally pays for itself in under 3.0 years (full project cost).

The Helios enables the operator to run their cooling tower systems at higher cycles of concentration due to the reduced requirement for chemicals needed to prevent tube fouling. Through higher cycles, thousands of gallons of make up water can be saved. Lastly, the Helios is a net zero water consumer.



Equipment Life Extension & Labor Savings

The Helios eliminates wear factors like the damage caused by manual tube cleaning and effects of abnormal chiller operations due to fouling. Also, the Helios eliminates micro-biologically induced corrosion (MIC) that is the often the cause of pitting, holes and premature tube failure.

The Helios eliminates the need to manually clean your chiller tubes. This saves thousand of dollars annually per chiller and provides the benefit of freeing your skilled technicians to work on higher value initiatives in your plant.



Sustainability

Shell and tube heat exchangers represent one of the largest producer of unnecessary greenhouse gas emissions. Entirely preventable. A typical Helios installation (four 1,500 ton chillers) will save over 1.0M kW hours annually thus avoiding over 730 tons CO₂ emissions and providing the benefit equivalent to planting over 17,000 trees per year.

HELIOS TUBE CLEANING SYSTEM®

INNOVAS TECHNOLOGIES

Mailing Address:

P.O. Box 5279

Coralville, IA 52241

Tel. 1-877-897-6564

Email. info@innovastechnologies.com

www.innovastechnologies.com