

QMax Delivers the Best Heating Technologies for Asphalt Operations



QMax FTS (Fluid Tracing System) uses a patented, custom-fit, highly conductive aluminum channel to markedly improve heat transfer from steam / hot oil into process, significantly increasing efficiency and decreasing wasted energy associated with tracing. By using highly conductive aluminum, QMax FTS transforms the nature of standard stainless or copper tubing from inefficient convective heat transfer to high-efficiency conductive heat transfer.

The heating surface area is also increased to two inches per tracer to further increase heat transfer. This delivers substantial capital and maintenance cost savings and improves reliability and performance. Hunt Refining, PBF Energy, Chevron, Exxon Mobil, and Marathon have all successfully implemented QMax FTS into their operations.

**"If you're not using the QMax System,
you're spending too much"**

**– Robert Hager
Manager of Special Projects
Eastman Chemical Co.**

Steam / Hot Oil Tracing

QMax Industries, Inc. performs thermal FEA (Finite Element Analysis) on all tracing applications to model the temperature profile of a system before it's put into service. This analysis allows QMax to:

- > Predict potential failure modes
- > Maximize performance and
- > Guarantee thermal performance

Many different scenarios can be analyzed to improve the effectiveness and / or efficiency on a project. Customary advantages of QMax FTS include:



FTS
FLUID TRACING SYSTEM

Clear Advantages

Fewer Leaks

QMax FTS reduces the number of leak points by eliminating welding and fittings. No costly hoses are required for the system.

Customized Fit

QMax is made from aluminum, making field installation quick and simple.

Lower Cost

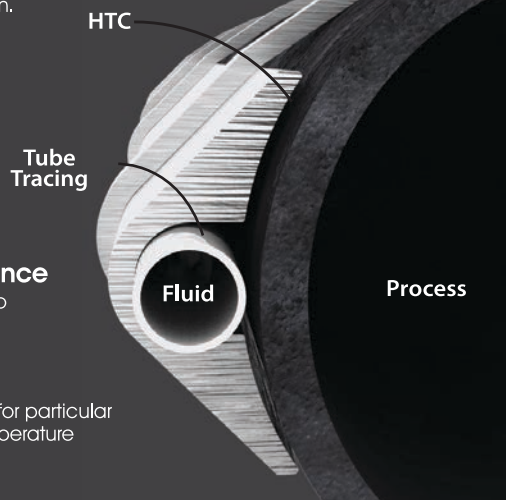
The total installed and long term maintenance cost of QMax FTS is consistently lower than jacketed pipe, tube tracers or carbon steel tracing.

Easy Installation and Maintenance

QMax FTS fits over common tubing with no welding, so installation and maintenance are easy and well understood.

Engineered Systems

Each application is specifically designed for particular heating requirements to offer precise temperature control and energy consumption.



QFIN
TANK HEATING SYSTEM

QMax Industries, Inc.

is a technology company based in Charlotte, NC, with several patents in the field of process heating.

Our specialties include:

- > High Performance Steam Tracing
- > High Performance Electric Tracing
- > Equipment Jacketing
- > Tank Heating

**"We're committed to be
the world leader in steam
tracing technologies"**

Thomas W. Perry
President

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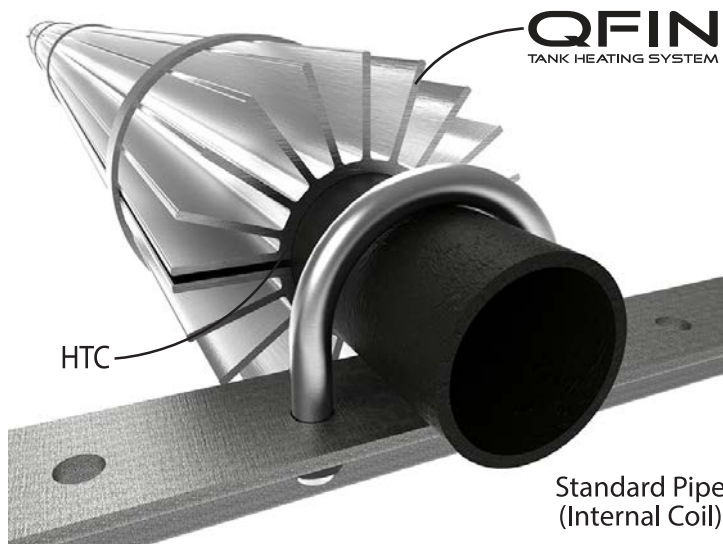
QFin: Breakthrough Performance

QFin incorporates several unique design innovations to deliver breakthrough performance when compared with traditional fins.

QFin is not welded on and so can be removed and replaced without removing the internal heating coil itself, eliminating the need for costly hydroblasting or total coil replacement after a coking event. Instead, the fins are simply removed by cutting straps, so new fins can be applied. Removability is a huge operational and cost advantage when heating asphalt, bitumen, and other high viscosity fluids that are prone to coking.

Yet **QFin**'s advantages are not limited to removability. Its horizontal design increases heating footprint dramatically. For example, a two inch pipe coil with **QFin** is 5.75 inches in diameter. That kind of gain in heating surface is crucial when heating high viscosity fluids.

The horizontal direction of **QFin** also allows for much greater circumferential distance between the fins. A thin layer of coke will not "close the gap" between fins as it so often will in a traditional spiral welded style fin. This means **QFin** can deliver longer service life.



QFin's patent-pending* design maximizes the heat input of a carbon or stainless steel internal heating coils and it is fully removable and replaceable. **QFin** is a bolt-on heating fin that attaches to any size pipe. The highly conductive aluminum material of **QFin** increases the heating surface area by 1,000% which allows for greater heating capabilities or decreased total footage of the internal coil. **QFin** is specifically designed for high viscosity fluids such as Asphalt, Bitumen and Heavy Oils to allow for easy removal and reinstallation of fins if the product cokes on the fins.

* USPTO: 8,469,082
8,662,156

Estimated Cost Savings

Companies that implement **QFin** as an improvement to standard internal tank coil heating systems often realize significant capital and maintenance costs savings. The largest impact is the **reduction of internal coil infrastructure** (up to 4 times reduction in needed coil length). The following example demonstrates the potential savings based on historical prices. The material savings alone more than offset the cost of the **QFin** system. To run a more detailed analysis of savings, please send us the unit prices that apply to your site specifications.

Scenario "A" - Traditional 2" Internal Heating Coil

- 2400 lf of Heating Coil x \$50 per foot = \$120,000 Total Install Cost

Scenario "B" - QFin Installed on 2" Internal Heating Coil

- 600 lf* of Heating Coil x \$80 per foot = \$48,000 Total Install Cost

Total Cost Savings with QFin = \$72,000

*Adding **QFin** to the system results in a 4X REDUCTION in coil length.

"The QFin System improved the heating performance in our tanks and helped us make better product"

- George Mariani
Terminal Manager
Mariani Asphalt
(An Associated Asphalt co.)



- > **QFin** is not a one size fits all system for all areas of industry. It is specifically designed for heating asphalt, bitumen, and other high viscosity fluids.
- > **QFin** increases the heating surface area to reduce capital and energy costs.
- > **QFin** continues to perform even after it is subjected to thin layers of coke.
- > **QFin** is removable to reduce down time and maintenance costs associated with major coking events.