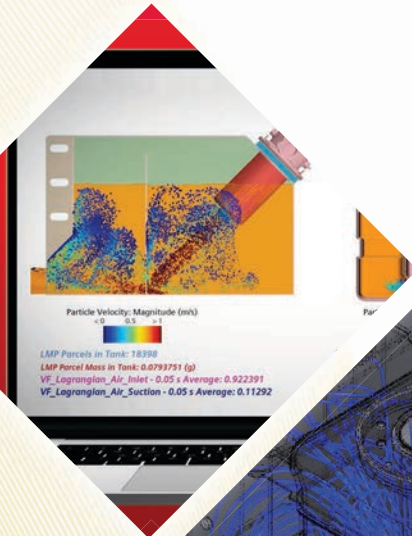
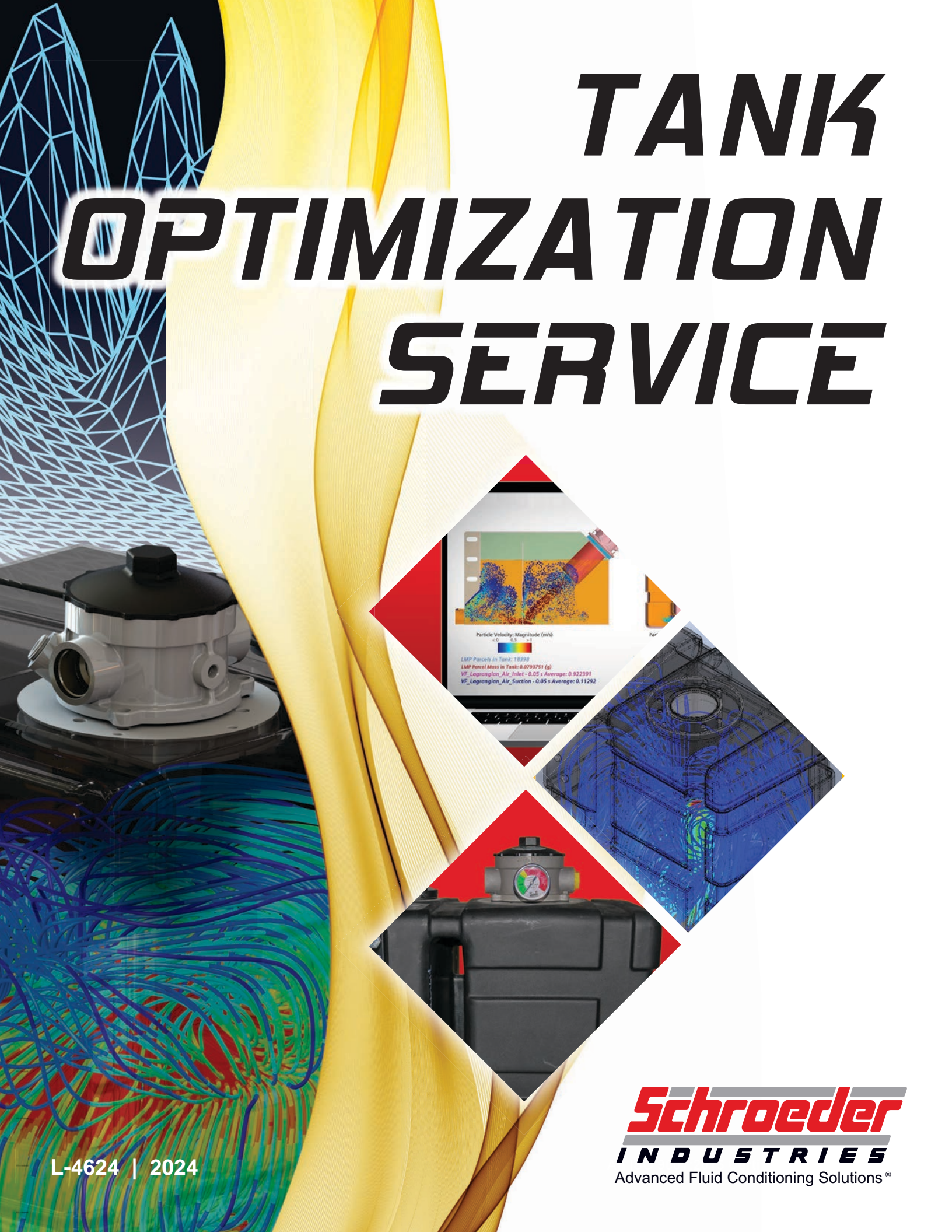


# TANK OPTIMIZATION SERVICE



# TANK OPTIMIZATION SERVICE

Are you getting the most out of your hydraulic reservoir?



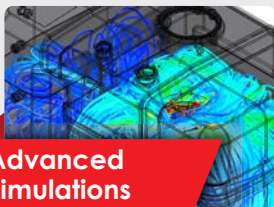
The goal of hydraulic tank optimization is to reduce the reservoir size and thus reduce its fluid volume. Two primary factors determine how much a tank can be optimized:

- **Volume Utilization.** In a suboptimal reservoir design, 'dead zones' can appear, where fluid stagnates and is not effectively utilized by the system.
- **Fluid Velocity.** Fluid velocity impacts how well a tank can de-aerate and prevent new air from entering the fluid due to splashing. Lower fluid velocity is more desirable.

How can Tank Optimization analysis benefit you?

- ✓ **Identify Inefficiencies.** Analysis can reveal inefficiencies in the hydraulic reservoir design, enabling valuable system improvements.
- ✓ **Increase Machine Space.** A smaller tank means more room for innovations like larger fuel tanks or batteries, or even downsizing the footprint of a system design.
- ✓ **Improve Energy Efficiency.** Reduced tank size/fluid volume reduces both the weight and warmup time of the overall system, consuming less energy in operation.
- ✓ **Reduce Cost.** Tank downsizing results in a reservoir that requires less material to produce and a hydraulic system that requires less oil to operate, reducing expenses.
- ✓ **Increase Sustainability.** Improving fuel efficiency, reducing oil volume, and minimizing the material needed to construct the system's reservoir through Tank Optimization all contribute to a reduced carbon footprint.

## Work with the Tank Optimization Experts at Schroder Industries



### Advanced Simulations

- ◆ Computerized simulations and analysis of tank assembly characteristics including flow, deaeration, sloshing, temperature, and structure



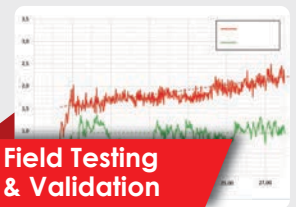
### Laboratory Testing

- ◆ Experimental investigation of the deaeration performance of tank systems
- ◆ Unique air content sensor for quantitative characterization, optimization and validation of tank systems



### Proven Experience

- ◆ Many years of proven experience in the field of "Air In Oil"
- ◆ Advanced filtration research & development facility for individual system analysis and custom solutions



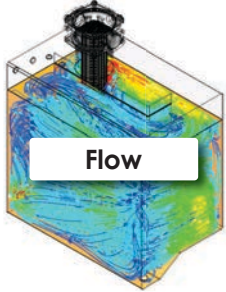
### Field Testing & Validation

- ◆ Measuring air content in the actual hydraulic system
- ◆ Investigating working conditions and their impact on air content in reservoir
- ◆ Final validation of optimized tank systems

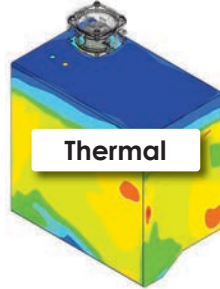
# EXPERT TANK ANALYSIS

## Ever wonder what's happening inside of your reservoir?

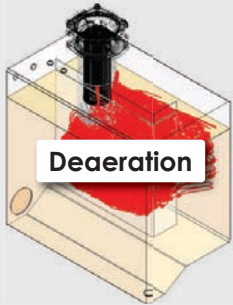
Through cutting-edge simulations and CFD analyses, we provide our customers with real world data on various tank dynamics and characteristics to uncover inefficiencies in the tank assembly and develop optimized solutions for virtually any application.



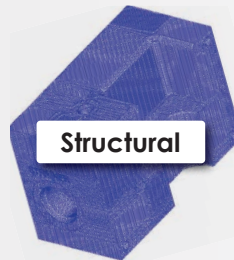
**Flow simulations** assess the flow patterns and velocity of fluid within the tank. Fast, turbulent flow can lead to air contamination or poor de-aeration. Stagnant pockets in the reservoir indicate inefficient circulation and wasted space.



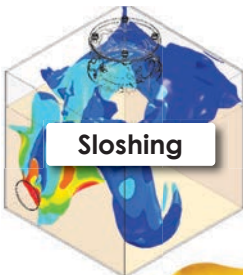
Temperature reveals a lot about the quality of a reservoir design. How quickly/evenly does the fluid reach operating temperature? Could hot spots be indicating faster fluid degradation? Do cold spots signify stagnant flow? **Thermal simulations** provide these valuable insights!



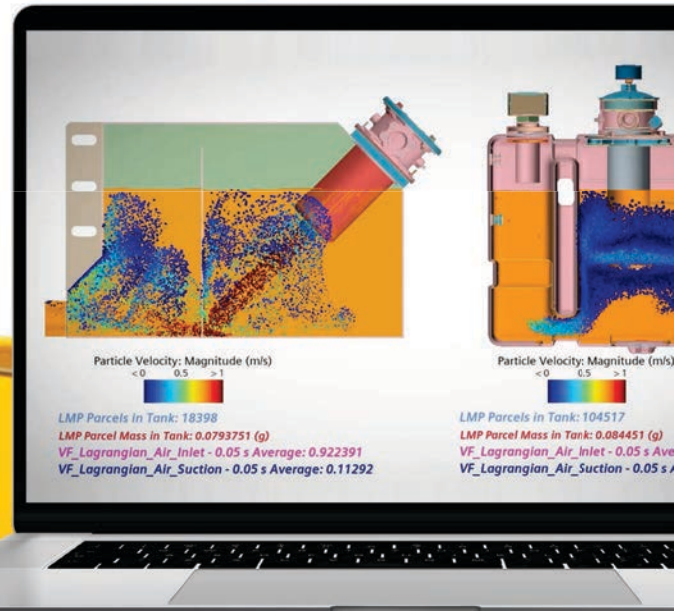
Removing air from the hydraulic fluid is one of the most important roles of the hydraulic tank and return-line filter. **Deaeration simulations** determine air residence time in the tank. If air and fluid move too quickly in the tank, then the tank can't effectively de-aerate!



The structure of a reservoir influences not just how fluid circulates, but also whether it will deflect when full or possibly fail or become damaged when mounting or bearing further loads. Find out if your design is optimal with **structural analysis!**



Hydraulic tanks play a big role in deaeration, but a sub-optimal tank can actually be one of the biggest contributors to air contamination! **Sloshing simulations** reveal if splashing within the reservoir could be trapping air in the hydraulic fluid.



## SCHROEDER SUCCESS

### Tank Optimization in Action

An OEM specializing in custom truck-mounted machines reached out to Schroeder to increase energy efficiency and decrease the oil volume, weight, and reservoir footprint in their systems.



37.5% REDUCTION  
IN TANK FOOTPRINT



15 GALLONS OF OIL  
SAVED PER UNIT



214LB OVERALL  
WEIGHT REDUCTION



STREAMLINED SOURCING:  
SCHROEDER DOES IT ALL!

Read Full  
Case Study:





# COMPLETE TANK SOLUTIONS

Schroeder Industries has everything you need for an optimal tank assembly:



## TNK Series

- ◆ Ultra-durable, rotomolded reservoirs in 5 stock sizes with customization available
- ◆ Lightweight and designed with de-aeration in mind for unprecedented Tank Optimization potential
- ◆ **Complete Tank Packages** available with a full suite of proven Schroeder hydraulic accessories including filters, breathers, and indicators



## Advanced Filtration

- ◆ Superior filters engineered for improved flow, exceptional filtration, and improved deaeration
- ◆ Air Fusion Technology (AFT) filters available for world-class de-aerating filtration



Tank Optimization Services and the TNK Series are part of Schroeder **Industries' Energy Sustainability Initiative**, our mission to provide filtration solutions that contribute to a cleaner world and help organizations reach their sustainability goals.

- ◆ Reservoir downsizing through Tank Optimization reduces oil usage/waste, improves energy efficiency and reduces material consumption among other carbon-reducing perks.
- ◆ The light weight of TNK Series compared to typical steel tanks increases the energy efficiency of the hydraulic system.
  - ◆ Made with recyclable High Density Polyethylene (HDPE), considered among the easiest plastic materials to recycle.
  - ◆ HDPE products require less energy to produce than a comparable product made from steel.

 580 West Park Road | Leetsdale, PA 15056, USA  
 724.318.1100 phone | 724.318.1200 fax  
 [sisales@schroederindustries.com](mailto:sisales@schroederindustries.com)  
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**Learn more about how Tank Optimization can benefit you!**