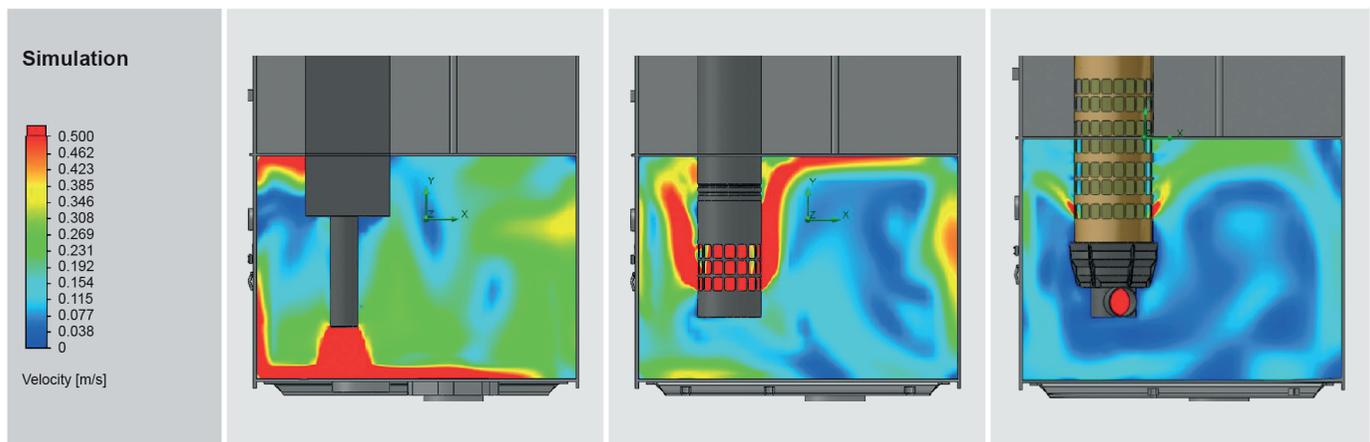


Reservoir Optimization

HYDAC's one-of-a-kind tank reservoir optimization solutions can reduce reservoir size by up to 40% with in-to-out filtration, integrated deaeration windows, and custom filter designs. Morrell Group can design and test custom reservoir and filter solutions to reduce needed materials, decrease oil volume, and free up space in mobile machinery - all while maintaining required performance and functionality.

	OUT-TO-IN Standard		OUT-TO-IN with diffuser		IN-TO-OUT optimized	
	Bubble size	Flow velocity	Bubble size	Flow velocity	Bubble size	Flow velocity
Upstream	Medium ↓ Crushing	Medium	Medium ↓ Crushing	Medium	Medium ↓ Crushing	Medium
Filter medium	Small ↓ Crushing	Low	Small ↓ Crushing	Low	Small ↓ Crushing	Low
2. Stage	None		Diffusor		Window solution ↓ Coalescence	
Downstream	Small	High	Small	High	Large	Very low
Conclusion	Small bubbles with high velocity		Small bubbles with high velocity		Large bubbles with very low velocity	
Air separation	Not optimized		Improved		Very good	
Oil slowdown	None		Low		Optimum	



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In-to-Out Filtration

An upstream flow from the bottom rises to an outlet close to the oil's surface, allowing for low outlet velocity and minimal turbulence. Low velocity and turbulence create smooth oil blending, which reduces sloshing.

Deaeration Windows

The guidance of the flow above the oil level allows air bubbles to coalesce, ensuring quick and seamless deaeration of air in the oil tank reservoir. Faster deaeration allows for more frequent turns in the reservoir.

Flow Designs

While flow designs are available in a standard line of filter solutions, custom flow designs are available for max reservoir optimization. These designs allow for low flow velocity, which simplifies internal tank complexity.



Air-X Technology for Oil Tank Optimization

HYDAC Air-X technology reduces tank reservoir size by 30 to 40%, which decreases oil volume, frees up design space, and lowers complexity with minimal effort, piping, and connections.

- Reduces complexity & materials to save costs
- Improves deaeration through advanced filtration
- Creates low discharge velocities
- Reduces oil turbulence in the tank
- Uniformly mixes the oil in the tank
- Allows coalescence of air bubbles at the integrated deaeration window



RT Return Line Technology for Optimized Air Separation

The HYDAC RT Return Line Filter Technology is a tank reservoir system optimization solution focusing on flow and deaeration to create advanced air separation in the tank reservoir.

- In-to-out flow ensures the enclosure of contamination on the dirt side during element change
- Large opening profile to allow the oil to flow more slowly toward the tank
- Additional time for air bubbles to rise & coalesce
- Smooth & slow flow reduces splattering & creates a calm oil surface
- Optimized flow direction improves air bubble coalescence
- Oil flow affects air bubbles through the innovative hydraulic fine filter
- Small bubbles fuse with larger bubbles
- Increased bubble size allows them to rise & coalesce more quickly

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