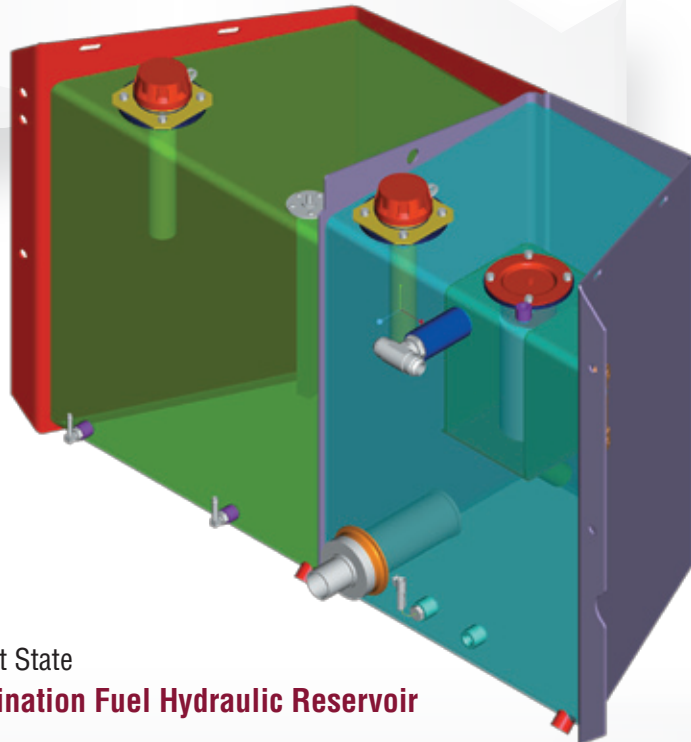




Construction Equipment



Current State

Combination Fuel Hydraulic Reservoir

Challenge:

A large OEM of telescopic material handling equipment had experienced severe quality defects on its combination fuel/hydraulic reservoir causing assembly line downtime and field warranty failures.

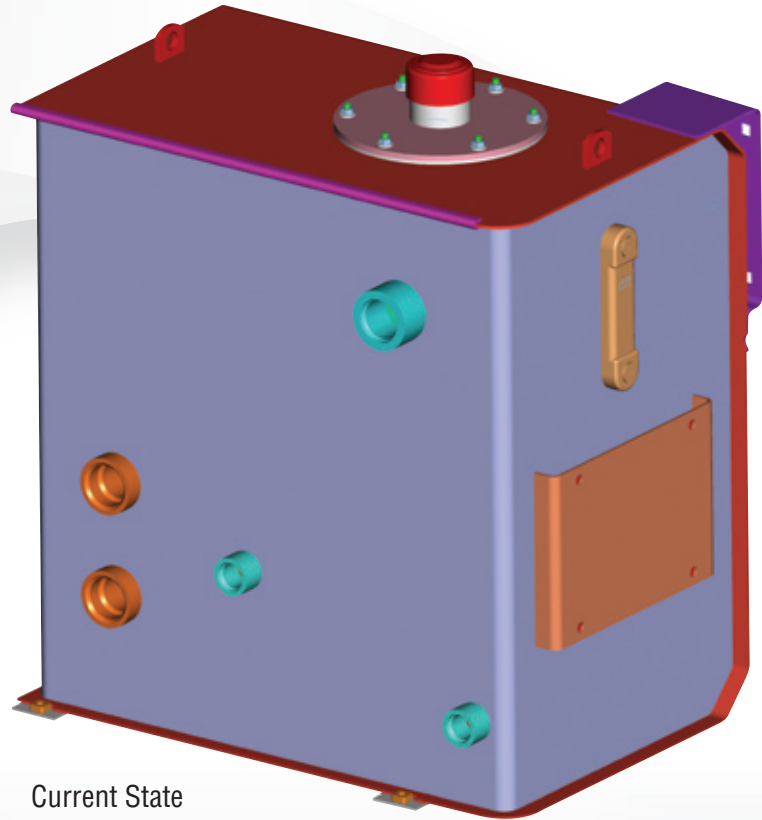
Solution:

Utilizing the Helical Program, Helgesen helped the customer realize a cost savings of 9% while producing a defect-free assembly utilizing the following techniques:

- ▶ Reduced potential failure modes by redesigning the reservoir. Modified part fit-up, bend radii, material types and drain locations to create a defect-free assembly.
- ▶ 50% reduction in reservoir leak point weld seams.
- ▶ 7x increase in manufacturing throughput by applying R4 production streets.
- ▶ In-house paint capabilities enabled better appearance control for a highly cosmetic assembly.



Industrial Equipment



Current State
Hydraulic Reservoir

Challenge:

A leading producer of mobile aerial work platforms, including boom and scissor lifts, needed to reduce its direct material costs of hydraulic reservoirs while improving delivery flexibility and lead-time.

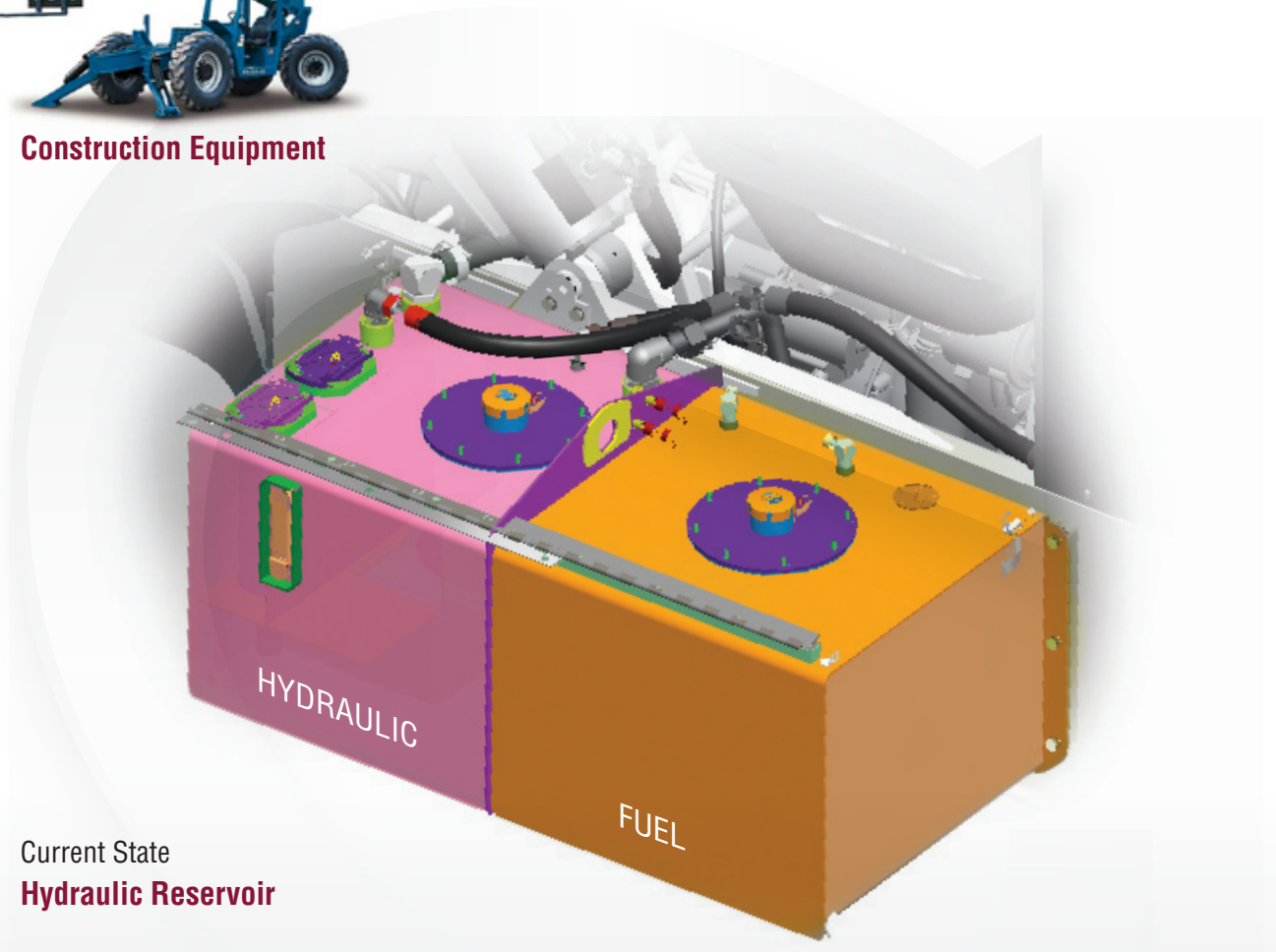
Solution:

Utilizing the Helical Program, Helgesen helped the customer realize a 19% savings by employing the following techniques:

- ▶ 30% reduction in purchase part components, through applying part standardization techniques within the demand matrix tool-set.
- ▶ 40% reduction in workcenters by implementing the product process simplification tool-set.
- ▶ 68% increase in manufacturing throughput by applying R4 production streets.
- ▶ 60% reduction in workcenter set-up by standardizing material types.



Construction Equipment



Current State
Hydraulic Reservoir

Challenge:

A leading manufacturer of telescopic loading equipment requested redesign ideas to simplify the hydraulic tank and circuit to alleviate existing filtration problems, lengthy assembly time and vendor complexity.

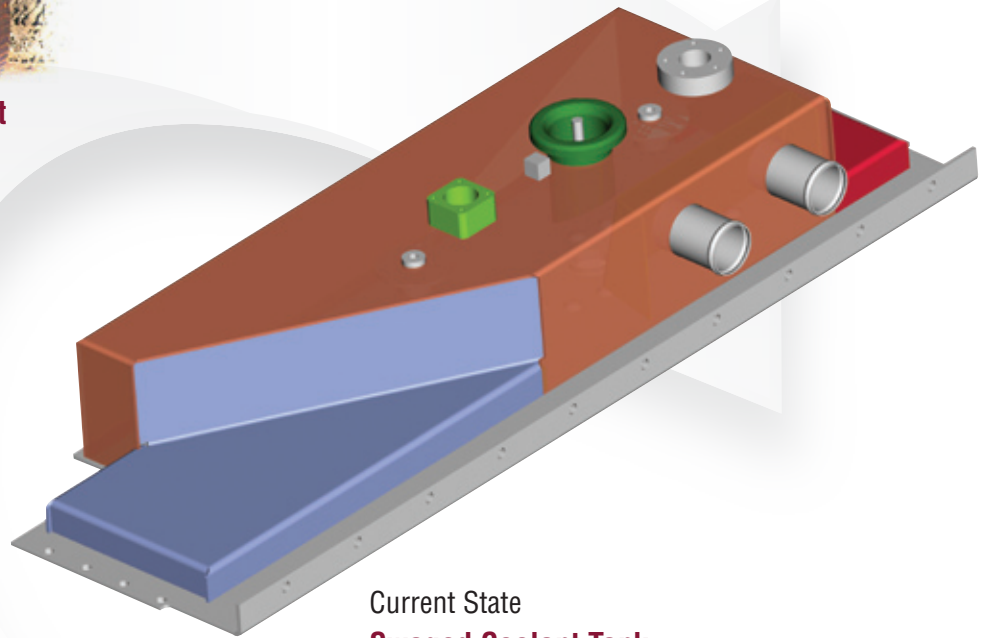
Solution:

Utilizing the Helical Program, Helgesen redesigned the hydraulic sub-system to ensure proper filtration, gauge pressure and overall functionality. The following quantitative benefits were realized:

- ▶ Reduce Bill of Material size by 20%
- ▶ Reduce Material Combinations by 75%
- ▶ Reduce Press Brake Set-ups by 75%
- ▶ Reduce The Number of Vendors by 93%
- ▶ Overall Cost Reduction by 11%



Mining Equipment



Current State
Swaged Coolant Tank

Challenge:

A leading manufacturer of construction and mining equipment needed to reduce annual costs to remain competitive in its markets.

Solution:

Utilizing the Helical Program, Helgesen helped the customer realize a 26% savings by employing the following techniques:

- ▶ 25% reduction in purchase finished components leveraging the Demand Matrix tool-set.
- ▶ 85% reduction in workcenter set-up by applying quick-change weld fixtures while providing higher variation in daily build schedules.
- ▶ 60% increase in manufacturing throughput by applying R4 production streets.