



CONSERVATION OF RESOURCES

Tank Optimization, AFT-F Increase Tank Performance, Provide ~42% Downsizing for Seed Tenders

Technical Application Bulletin

CHALLENGE

An OEM producing seed tender machines for the agricultural industry was fabricating their own 12-gallon metal tanks in-house. Schroeder Industries sought to increase the efficiency and reduce the volume of their reservoir, saving production and resource costs.

APPROACH

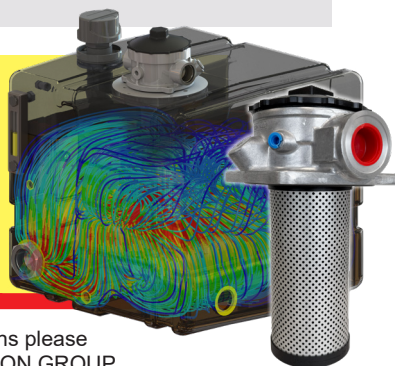
Schroeder Industries performed a tank optimization analysis which indicated that the existing reservoir was a candidate for downsizing. Analyses also detected hot and cold spots in the tank, indicating improper circulation of fluid throughout the tank.

To enable maximum downsizing, Schroeder Industries integrated an Air Fusion Technology (AFT-F) in-tank filter into the revised reservoir design. In collaboration with the OEM, Schroeder Industries designed a new reservoir which the OEM could manufacture in-house to match their porting arrangements.

RESULTS

- Tank Optimization resulted in downsizing of reservoir, conservation of hydraulic fluid resources:
 - 12 gallon tank resized to 7 gallons for a **5 gallon (roughly 42%) overall volume reduction.**
 - In 1 year of production across 750 seed tender units, OEM saw **3,750 gallon reduction in oil usage.**
 - Reduction in hydraulic fluid usage amounted to roughly **\$40,000 saved** in oil-related expenses.
- Improved tank assembly performance:
 - Uneven tank temperatures balanced, indicating **optimal oil flow** through the reservoir.
 - Restriction and back-pressure in the hydraulic circuit reduced through use of bowl-less AFT-F filter
- Lock & Key™ feature provides increased aftermarket revenue and ensures quality protection for the end user

- ◆ Tank Optimization Analysis: Detailed examination of flaws in existing tank assembly, development of more efficient, effective tank assembly design.
- ◆ AFT-F tank-mounted return filter (225 GPM @ 145 PSI)

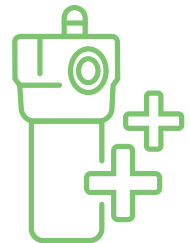


OEM SEEKING
IMPROVED EFFICIENCY
IN TANK ASSEMBLY



ANALYSIS REVEALED
DESIGN IMPROVEMENT
OPPORTUNITIES

AFTF FILTER REDUCED
BACK-PRESSURE IN
HYDRAULIC CIRCUIT,
ENABLED TANK
DOWNSIZING



**5 GALLON OIL
VOLUME REDUCTION,
~42% RESERVOIR
DOWNSIZING**

**3,750
GALLONS OF OIL
SAVED ACROSS
750 NEW UNITS**



**\$40K
REDUCTION IN
OIL COSTS**

