



SYSTEM AVAILABILITY

TNK12 FORESTRY STUMP GRINDERS

Technical Application Bulletin

PROJECT BACKGROUND

DISCOVER

- Forestry OEM produces stump grinders with a 20-gallon metal tank to a wide range of customers
- These machines need to be robust, durable and mobile.
- Needing an updated solution, OEM looked for assistance finding the next generation of elements on the stump grinders.
- Next gen. needed to be light-weight and compact but still structurally sound.



DIAGNOSE

- The fabricated metal tanks the customer was using can be filled with debris, heavy and prone to weld cracks.
- These tend to only operate as a space to store fluid due to lack of in-depth engineering analysis. The lack of this creates an issue with space utilization and flow profile.
- This takes valuable time away from the OEM's skilled employees for low value work.

INDUSTRIES



DESIGN

What We Did: After we checked Schroeder's simulation data, we confirmed the geometry and internal baffle on the TNK12 would provide the same deaeration performance as a traditional 20 plus gallon reservoir.

Course of action

1. The TNK12 reducing the spatial footprint of the tank reservoir on the stump grinders gives the lightweight, compact and structurally sound component they were looking for.
2. Furthermore, the integrated components of the TNK12 reduces labor required with traditional hydraulic reservoirs. With many components installed as a complete plug and play package.
3. Careful calculation and considerations have been made to ensure that the material would perform properly under all foreseeable operating parameters when the machine is in use.



DELIVER

- Because the TNK12 is a readily available product in our catalog it was easy to provide a prototype to the customer for field testing.
- Using our prototype saved hundreds of development hours instead of producing their own rotomolded tank.
- After putting these machines through the rigorous testing required, our TNK12 remained unaffected by the wear and tear expected during operation.
- Because of space and weight savings provided, the customer was able to make additional improvements to their designs.
- Reducing the volume of the tank led to decreased total cost of ownership associated with lower oil usage.
- Intangible benefits also include ease of maintenance procedures, transport of material, and more available machine real estate for flexible designs.

Oil Reduced Per Unit (g)	Oil Reduced Annually (g)	Cost Savings (\$)
8 gallons	4,000 gallons	\$28,000
Labor Cost Per Tank (\$)	Number of Tanks	Cost Savings (\$)
\$30	500	\$15,000



CUSTOMER BENEFITS

- Saves thousands in transfer pump failures
- Non spin-on cartridge style element.
- Lightweight bowl design with replaceable element minimizes landfill waste

FURTHER APPLICATION AREAS

- Mobile machinery
- Equipment for a variety of industrial applications

ROI

Total Savings (\$)



\$43K

Underlying Values:

The TNK12 provided numerous benefits to the application: reduction in oil volume, labor savings, development time savings, and overall space and weight savings.

Because of our engineering doing development, the cost savings from was \$7,500 up front.

Total direct savings to the customer was \$43,000 annual. This also helped sell more machines, the overall end goal.

If our improvement efforts help them sell just 3 more machines a year, that is \$175,000 in additional revenue for them.

PRODUCT SPECS

TNK12 | Complete Package Solution w/ GeoSeal Quality Protected Elements & Private Labeling

Return Line Filter: ZT & GZT
Max. Return Flow: 40 gpm (150 L/min)

Weight: 21 lbs (9.7 kg)

Tank Materials: High Density Polyethylene (HDPE)

Tank Volume: Aluminum

Element Change Clearance: 7.4" (187 mm)