PROJECT PROFILE

LIFT TRUCK- 30,000 LBS.

CLIENT CHALLENGE

To develop a lift truck capable of lifting 30, 000 lbs. Based on a current 22,000 lb. design, and incorporated a completely new form of front axle.

SOLUTION

Perform FEA on current 22,000 lbs. truck design using a load of 30,000 lbs. to determine what structural changes are required to the frame, and update the frame design accordingly and;

- Modify side of frame and incorporate new drive axle design into the updated frame.
- Perform FEA on final frame design to ensure design integrity.
- Estimate the location of the centre of gravity for the new truck design and re-design truck counterweights to ensure frame length does not increase more than 6" over the current 22,000 lbs. truck design.
- Calculate new loads on rear steer axle due to increased ballast weights and shock loads.
- Perform strength calculations on rear steer axle components and re-design any components that are in danger of failing under new ballast loads.
- Work with fabricators to manufacture new frame, ballast, wheel and steer axle designs

PROJECT HIGHLIGHTS

- Performed FEA on multiple frames to test design integrity.
- Investigated multiple manufacturing processes
- Performed strength and fatigue calculations for multiple components.
- Used E-drawings to effectively communicate information to client and fabricators