

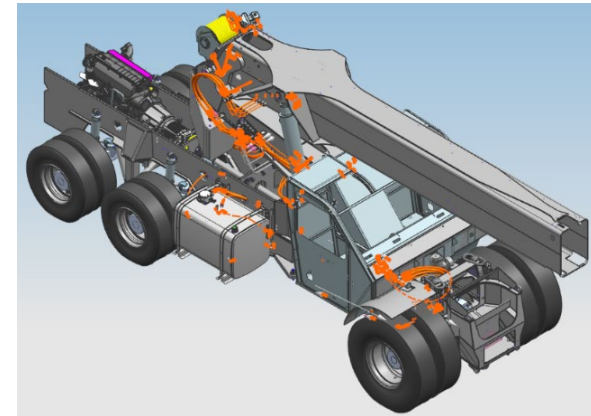
Summary

Project Name: 3D Hose Routing

Scope: 3D Hose Routing for Pick and Carry Crane

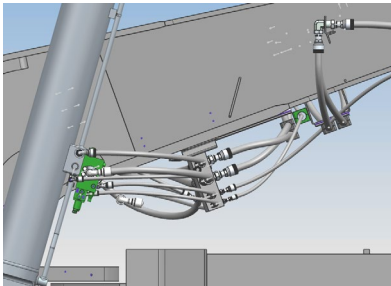
Software: NX Version9

- Objective is to complete 3D routing (hydraulic, pneumatic, fuel & grease) for pick & carry crane.
- Earlier cranes hose length & fittings types were finalized by trial & error method on the machines.
- This 3D CAD routing helps finalizing the hose assemblies virtually, saving a lot of time, money & rework.
- The entire hydraulic circuit is divided into different sub circuits to suit the installation practice being followed in the site.
- This also helps identify the adapter & orientation type required prior to the actual hose installation.

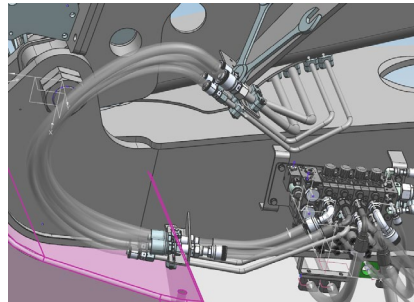


Luff Function Routing

Full Machine Routing



Boom Function Routing



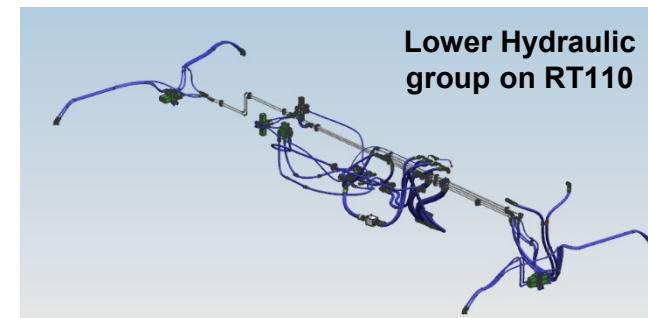
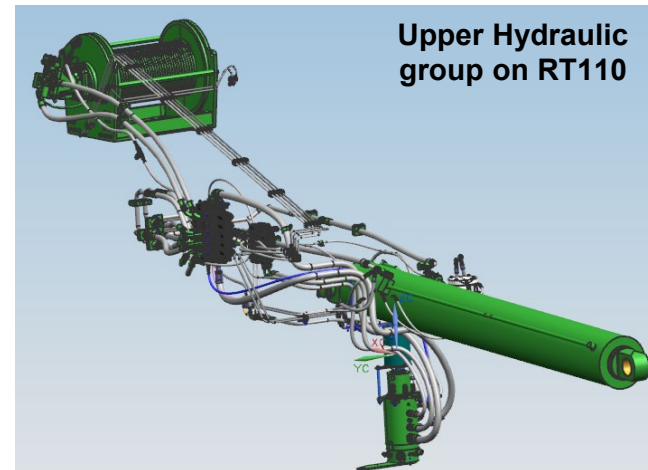
Summary

Project Name: 3D Hose Routing

Scope: 3D Hose Routing for Rough Terrain Crane

Software: NX

- 3D routing in NX provides accurate hose lengths
- New assembly friendly layout generated.
- Clamps provided at right places.
- Hydraulic fittings and hose ends standardized.
- Reduced hose lengths



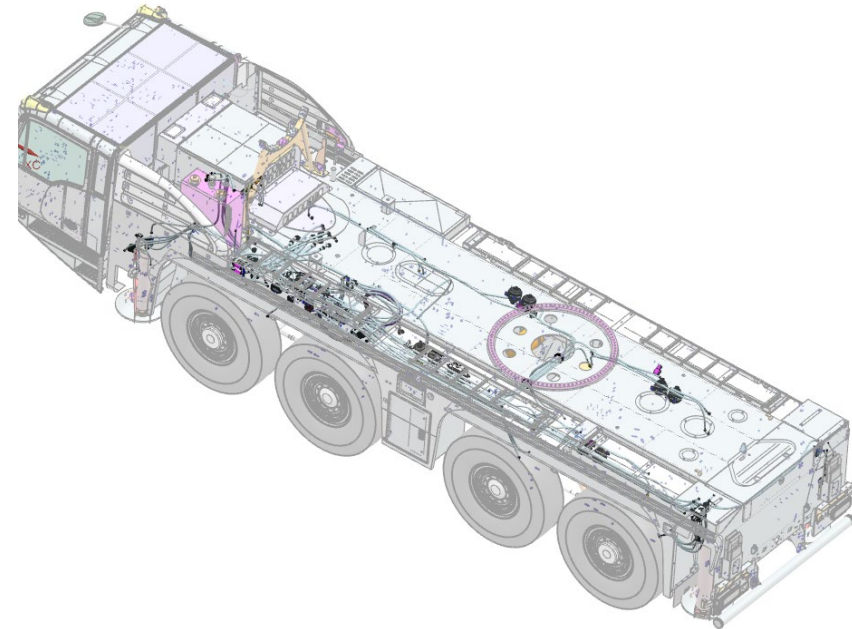
Summary

Project Name: 3D Hose Routing

Scope: 3D Routing for All Terrain Crane

Software: NX

- Complete 3D routing was done by referring pictures/Production documentation.
- Operations support for implementation of changes related to production issues.
- Restructuring and renaming of components to match ERP BOM structure.
- Quality check of all components for pressure ratings
- Support was also provided for complete 3D routing of New Product. Hydraulic hoses, pipes, fittings were selected by referring the schematic.



Summary

Project Name: 3D Hose Routing

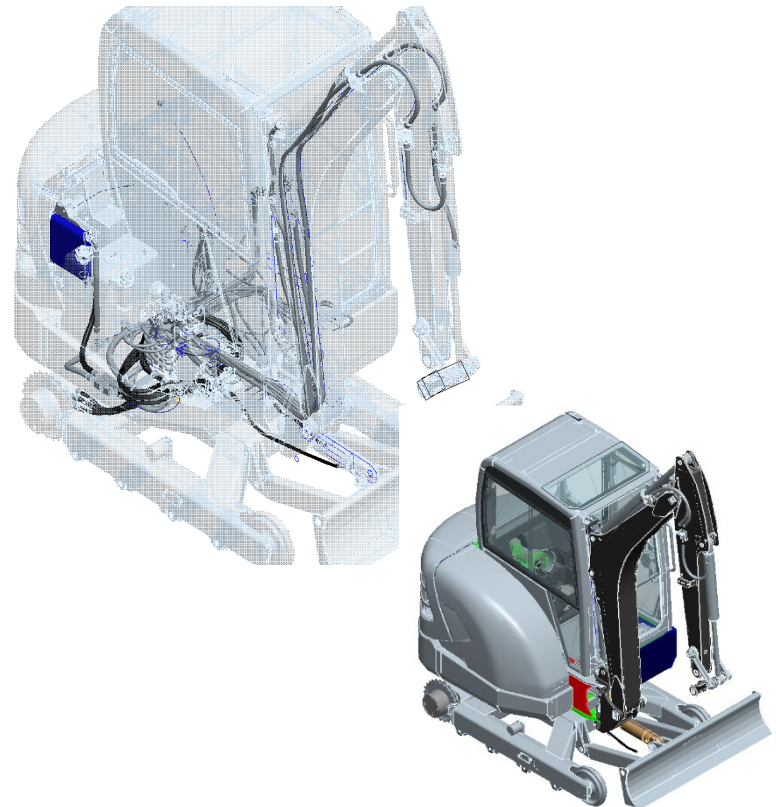
Scope: 3D Hose Routing for Mini Excavator

Software: NX

- Hydraulic hose & tube routing for Mini Excavator (Platform 3 machine - X35)
- Under carriage
- Upper carriage
- Workgroup
 - Optimized hydraulic hoses path to have reduced stress on hoses, with better accessibility of hose clamps.
 - Modelling hydraulic aggregates based on need.

Hydraulic circuit update:

- Correction based on the optimization
- New component introduction.



Summary

Project Name: 3D Hose Routing

Scope: 3D Hose Routing for Mini Excavator

Software: NX

- Routing of other auxiliary systems:
Air conditioning & heater system for
Platform X19 Machine.

Involved in some mechanical design
activities:

- A/C compressor relocation & mounting
design
- Updation of undercarriage structures.
- Muffler mounting bracket design

