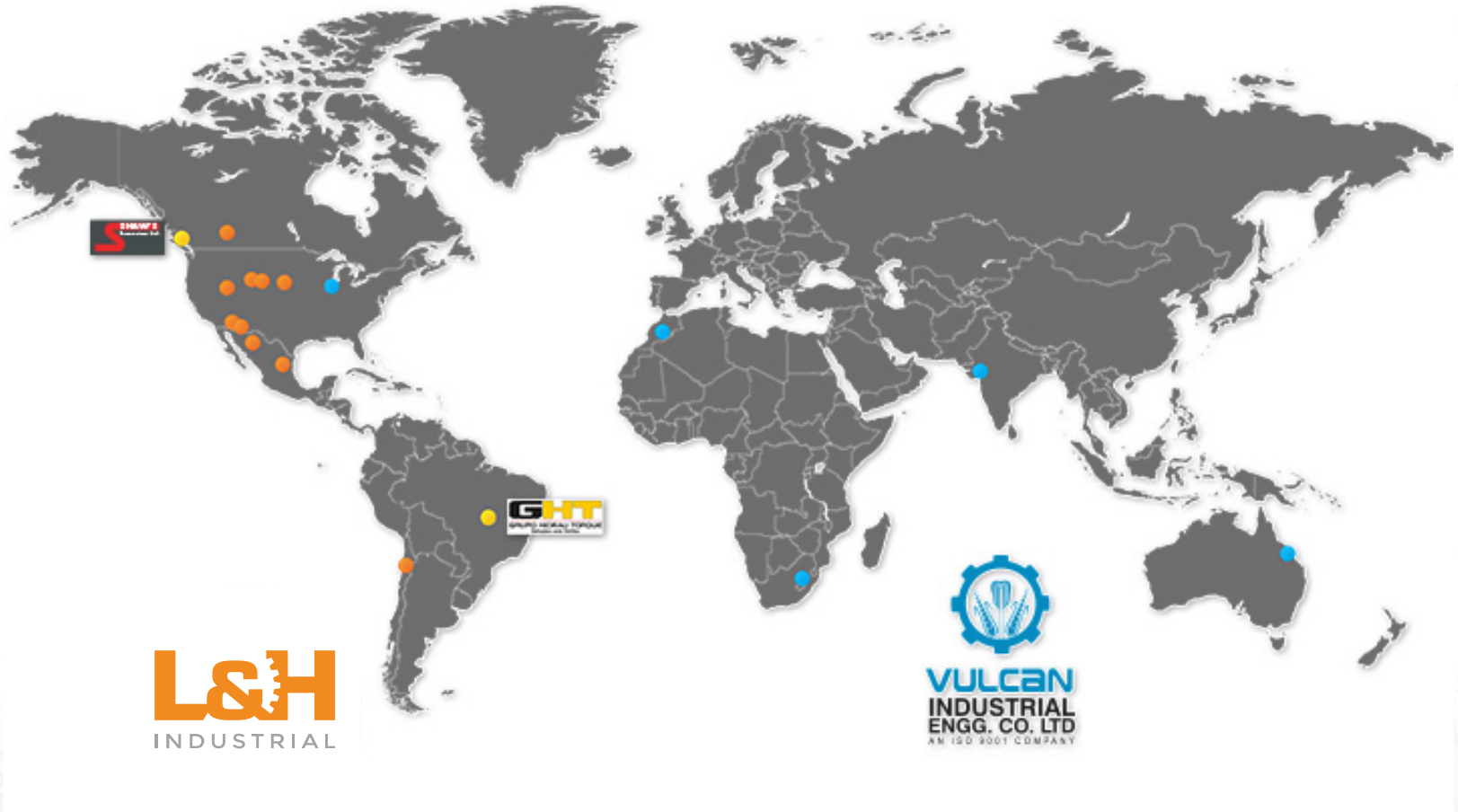




Haulage & Loading 2015

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# Worldwide Locations and Distributions



**L&H** INDUSTRIAL

TYPE POWERPOINT NAME HERE

# Product Lines

SHOVELS

DRILLS

DRAGLINES

MINERAL PROCESSING

MOBILE EQUIPMENT

FIELD SERVICES

CUSTOM PROJECTS

# ENGINEERING



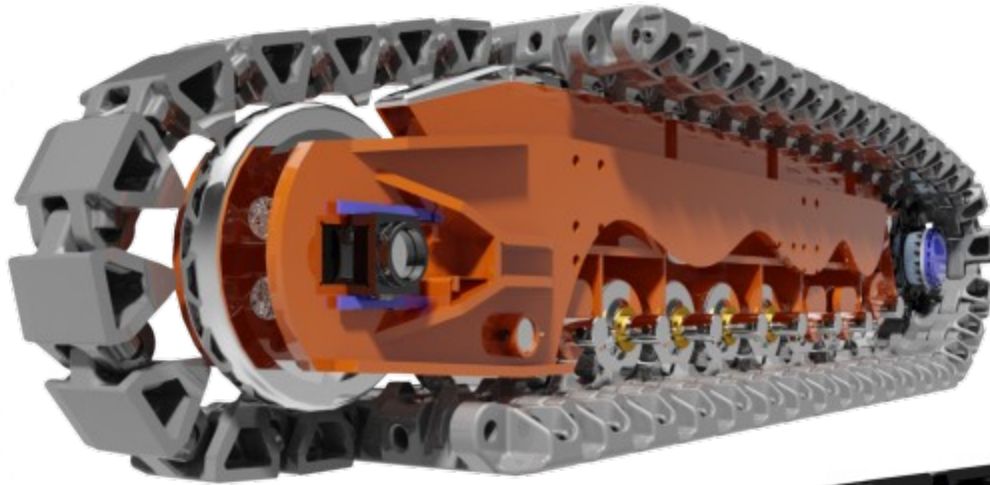
25 ENGINEERS

UTS/TK SOLVER, KISSOFT

AUTODESK INVENTOR, AUTODESK VAULT

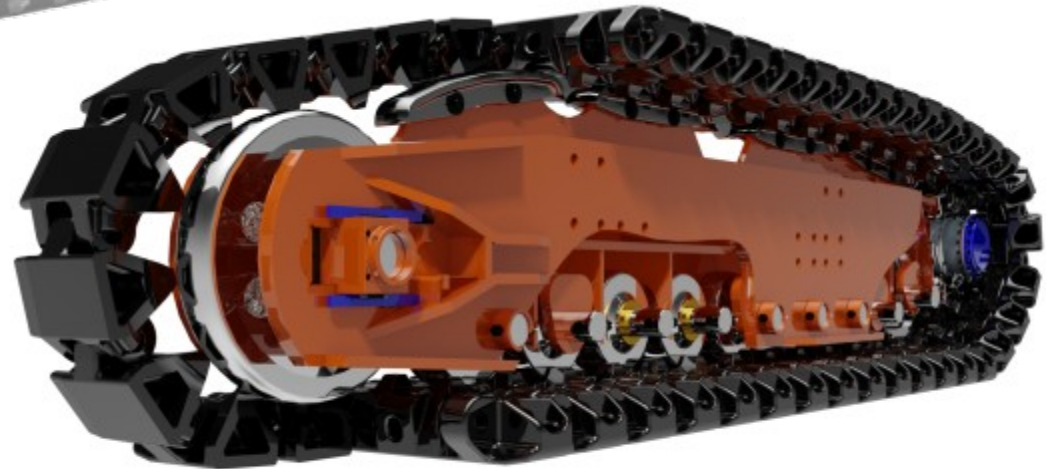
AUTODESK SIMULATION, MECHANICAL, COSMOS

# Undercarriages



CAT/Bucyrus

Joy Global/P&H



# Undercarriage Issues

## Shoes and Pins

- ✓ Pitch Growth
- ✓ Shoe Elongation
- ✓ Toe nails
- ✓ Broken Lugs/low bore life
- ✓ Galling
- ✓ Small clearance w/ roller hubs and side frames
- ✓ Uneven pin wear

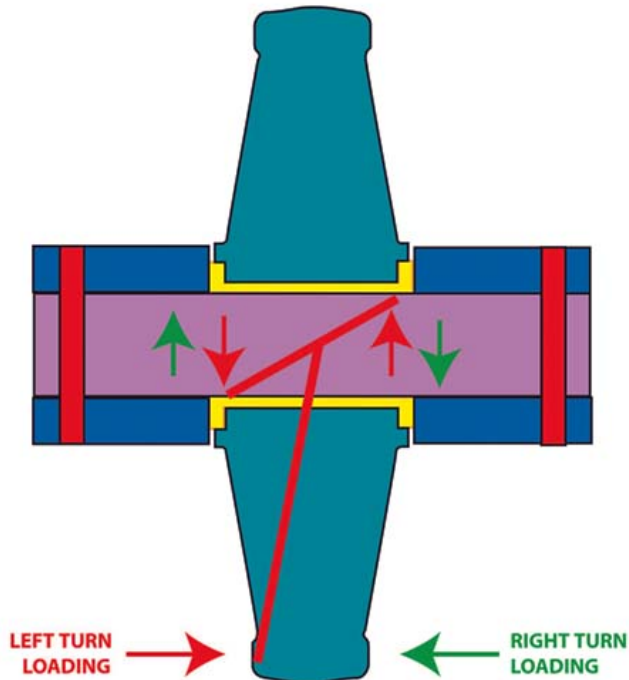
## Front Idler

- ✓ Turning
- ✓ Maintenance
- ✓ Bushings are not visible
- ✓ Bushing change out is lot of work

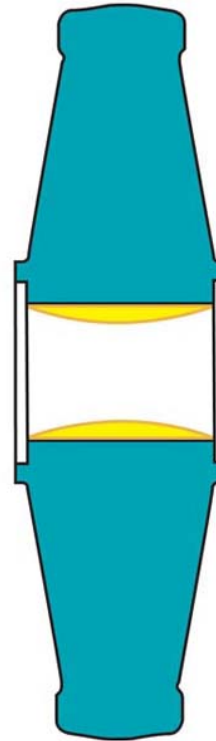


# Issues

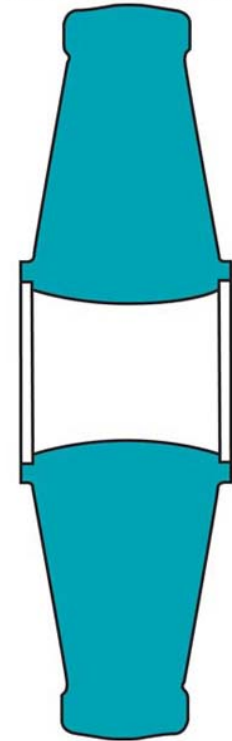
## 3 to 1 Leverage Disadvantage



## Change the Bushing

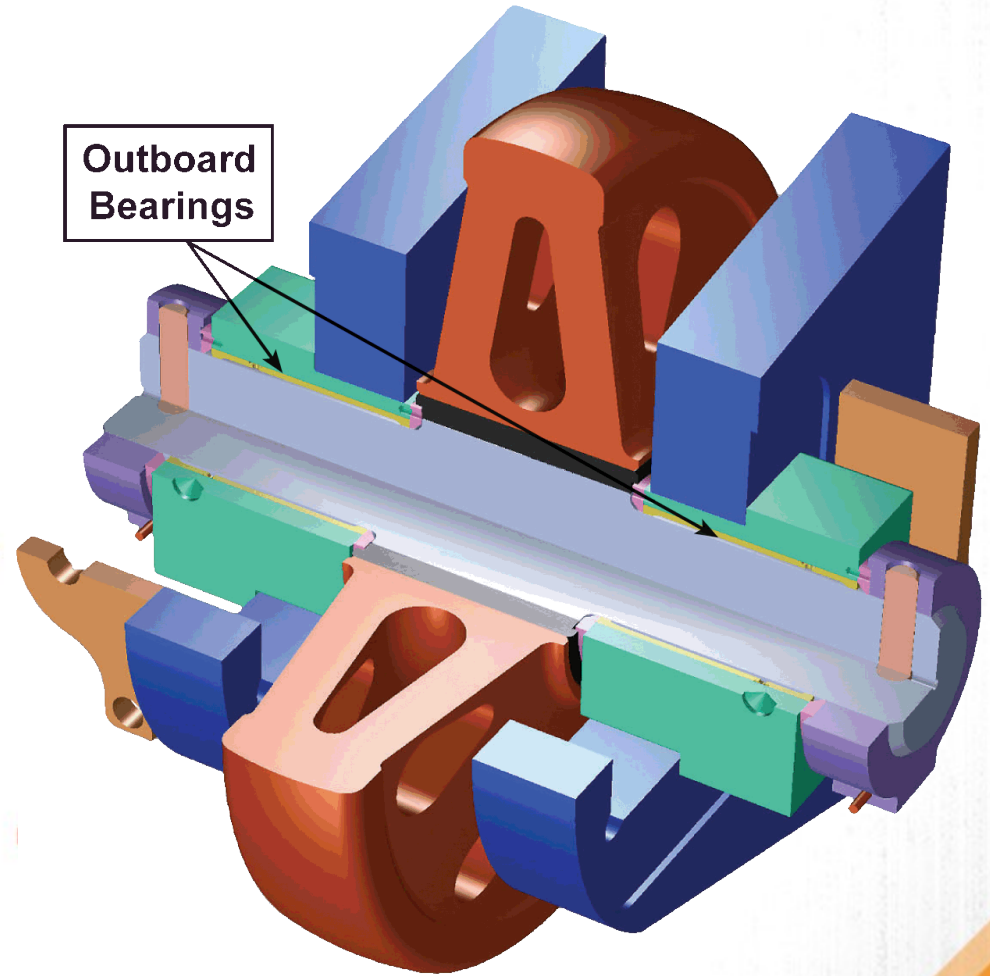
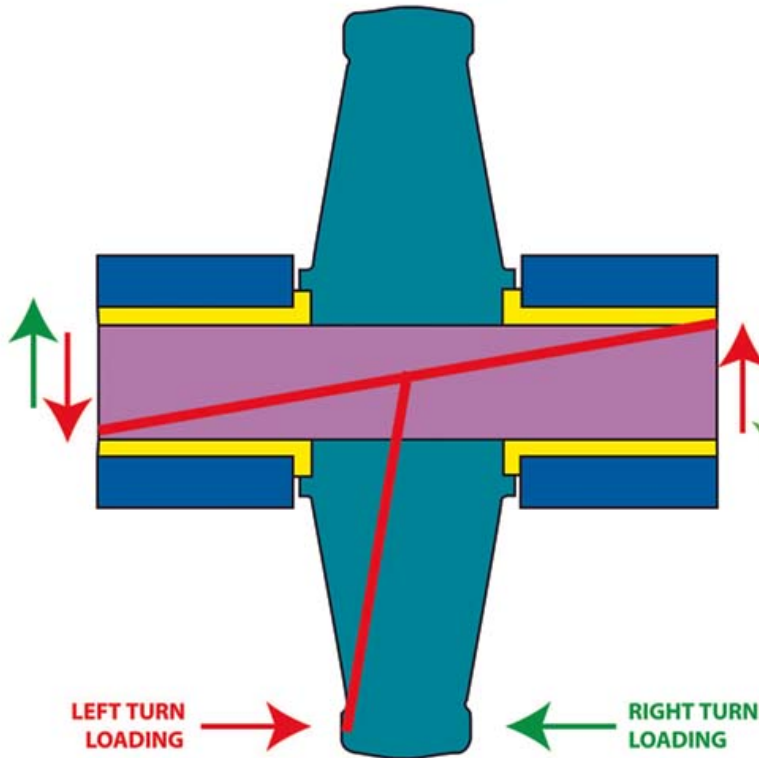


## Change or Repair The Roller & Bushing




# Front Idler Assembly Solution

1 to 1 Leverage Advantage



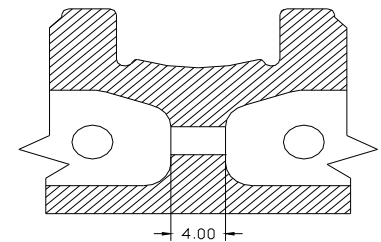
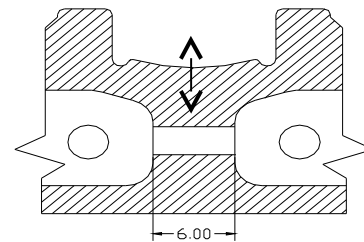
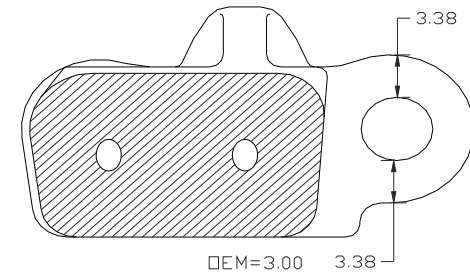
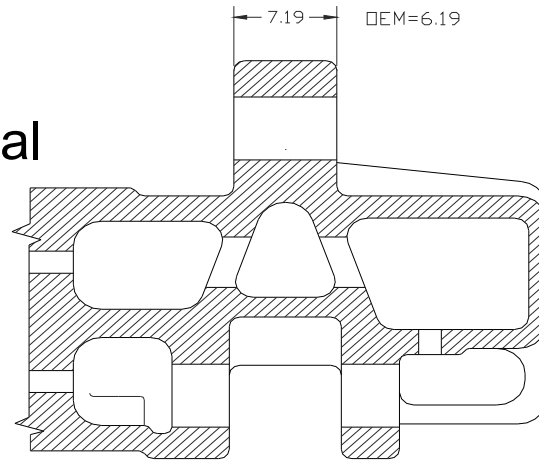


# Benefits

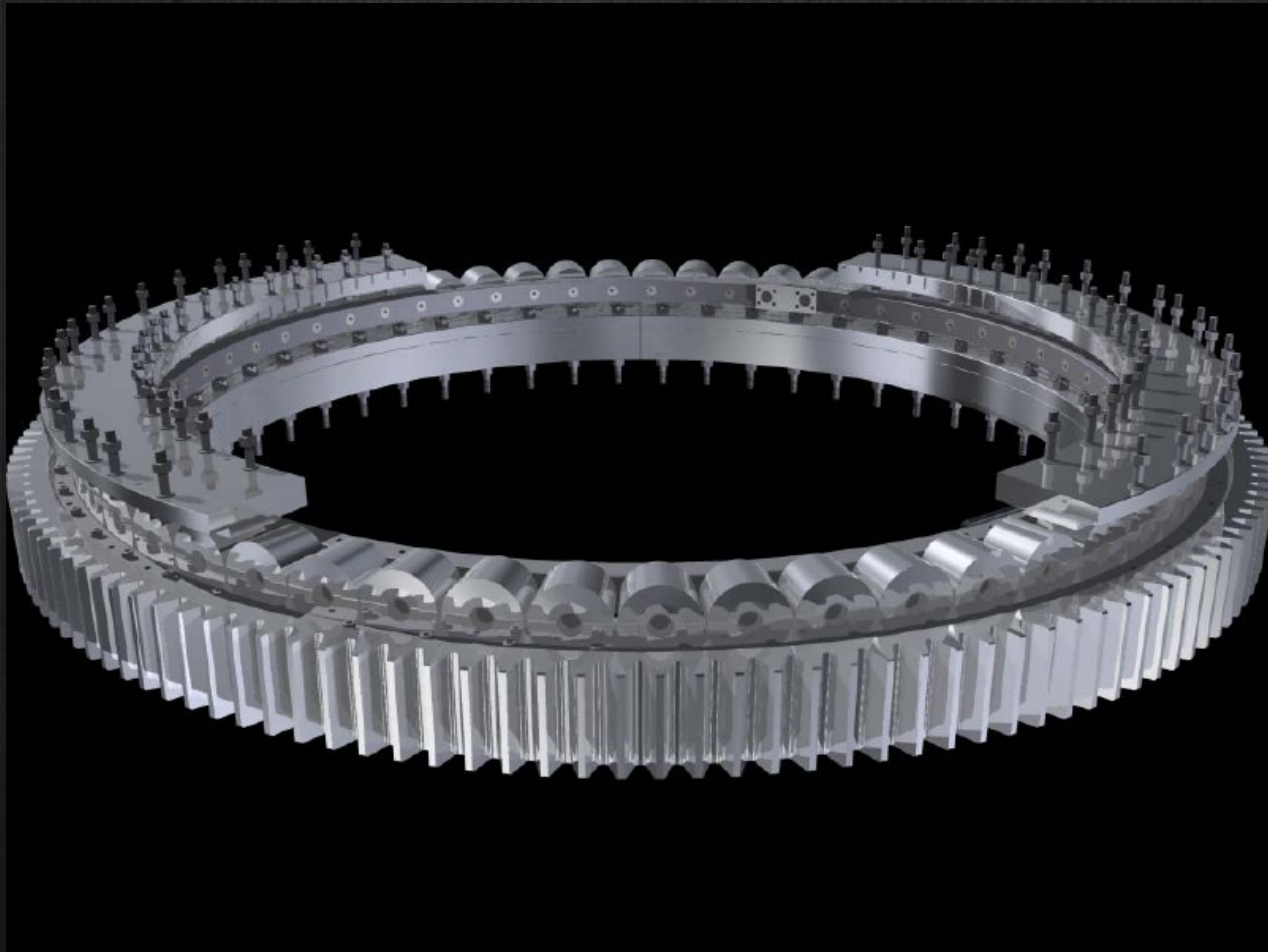
- ✓ No Need to Break the Tracks
- ✓ Maintenance Intervals Increased 100%-300%
- ✓ Increase in Safety and Production
- ✓ Increased Bearing Area Eliminates Hourglass Wear
- ✓ Lifetime Cost Savings \$150,000 +
- ✓ Triple Bearing Life  ENGINEERED MATERIALS
- ✓ Available for:
  - ✓ Joy Global/P&H 2300 and larger
  - ✓ CAT 7495/7495HF (495HR/HF)

# Shoes and Pins

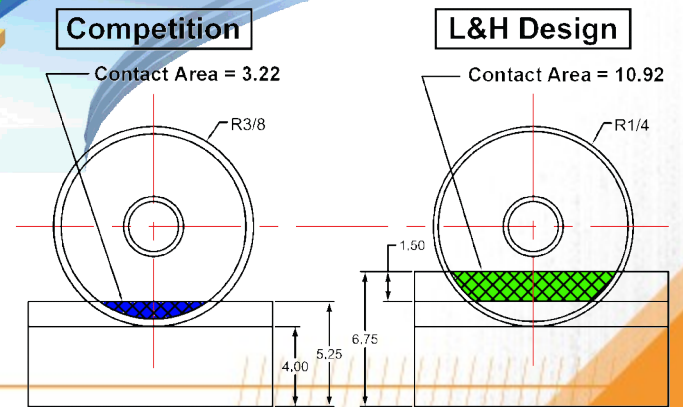
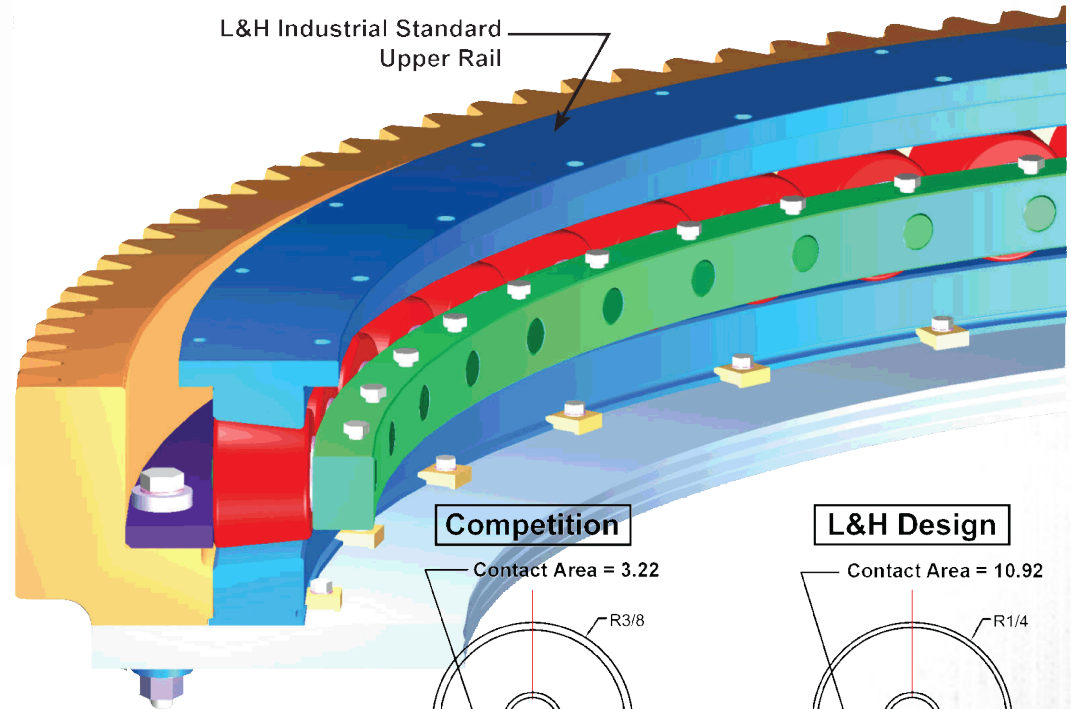
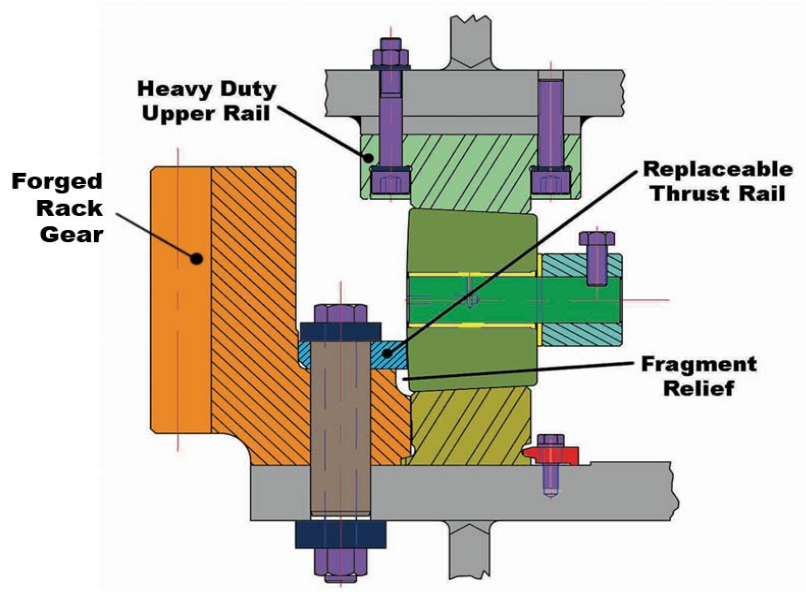
- Wider Pin Boss
- Enhanced Pin Material
  - Dissimilar Pin/Shoe material
  - Larger Diameter Pins
- Deep Roller Path
- Clearance Radii
- Raised Clearance
  - Shoes & Roller Hubs/Side Frames
- Refined Foundry Process
  - Reduced Cold Flow & Elongation



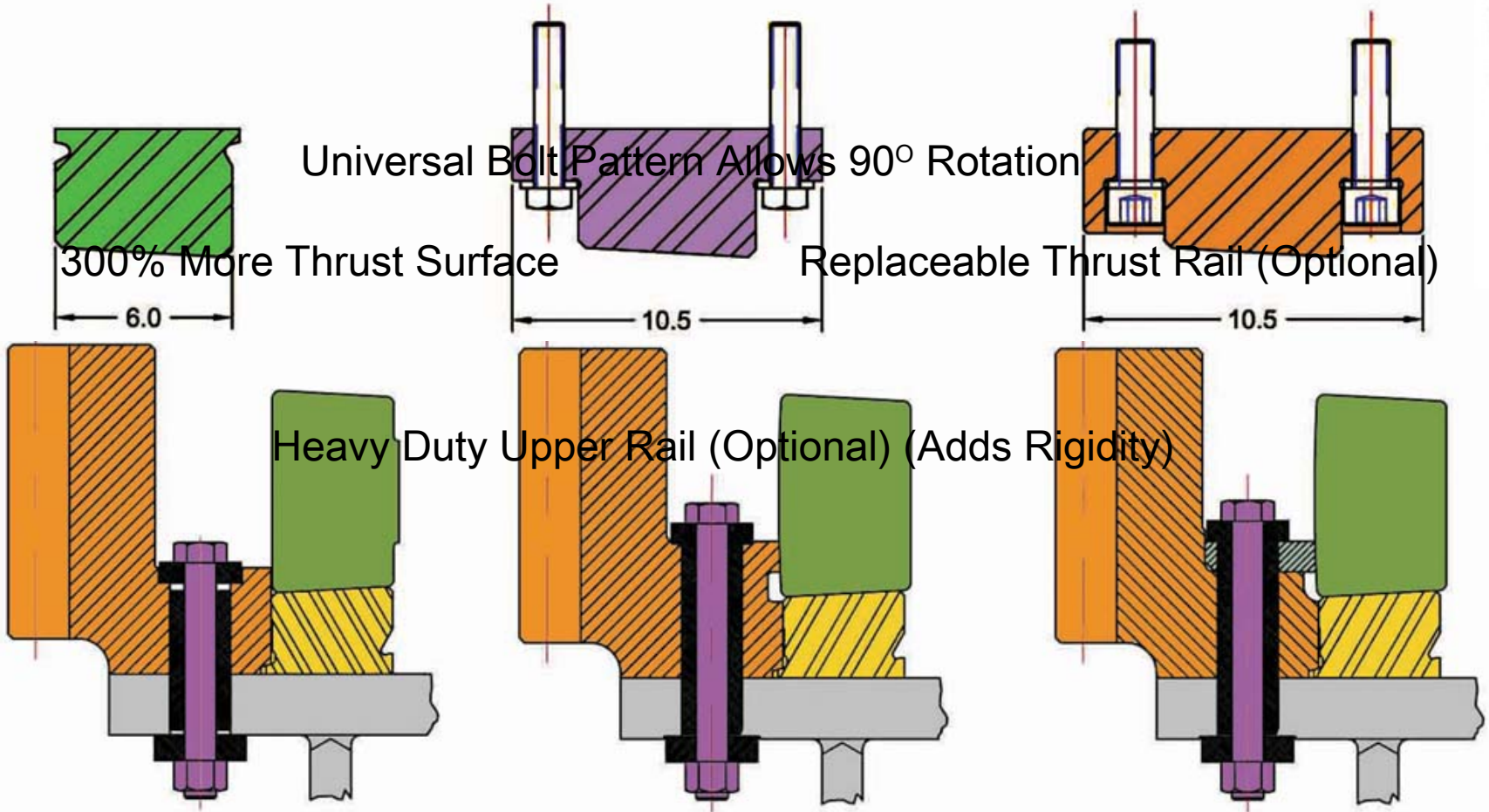
# Swing Systems



# Swing System Style #1



# Comparisons

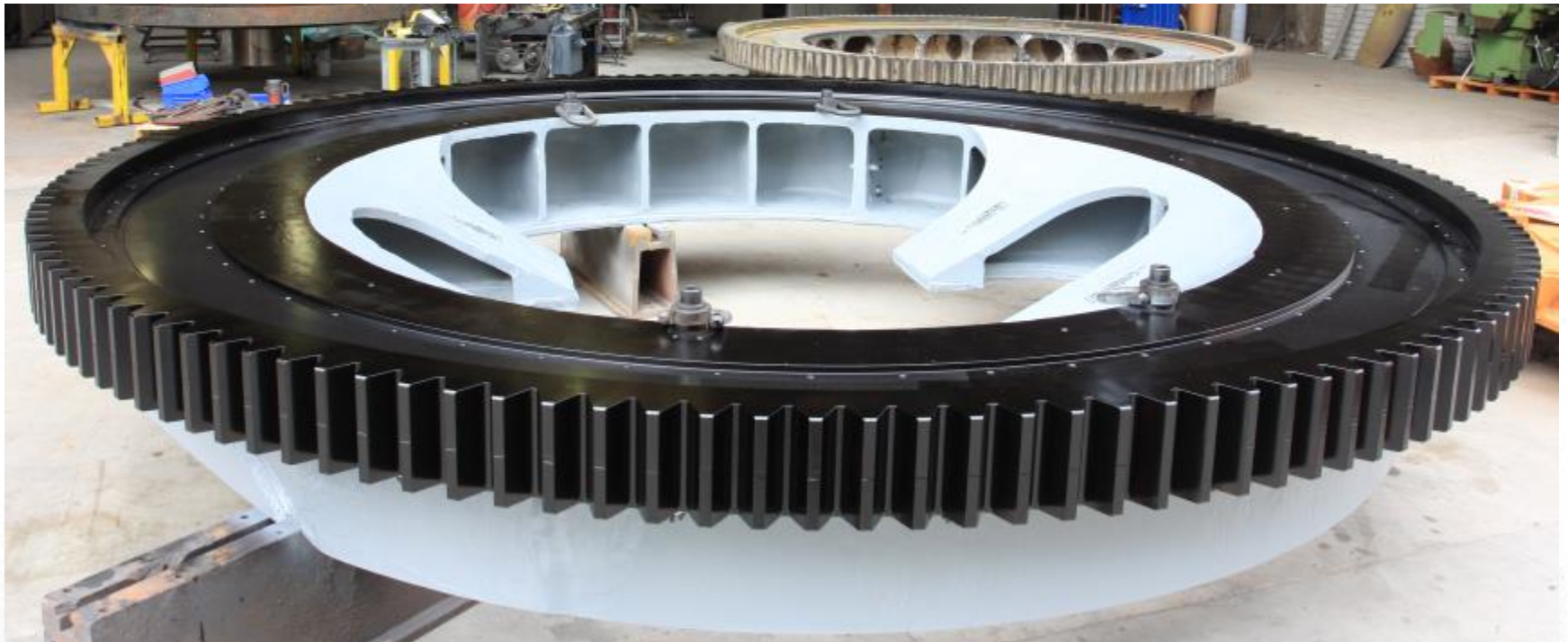


**L&H** INDUSTRIAL

L&H Standard

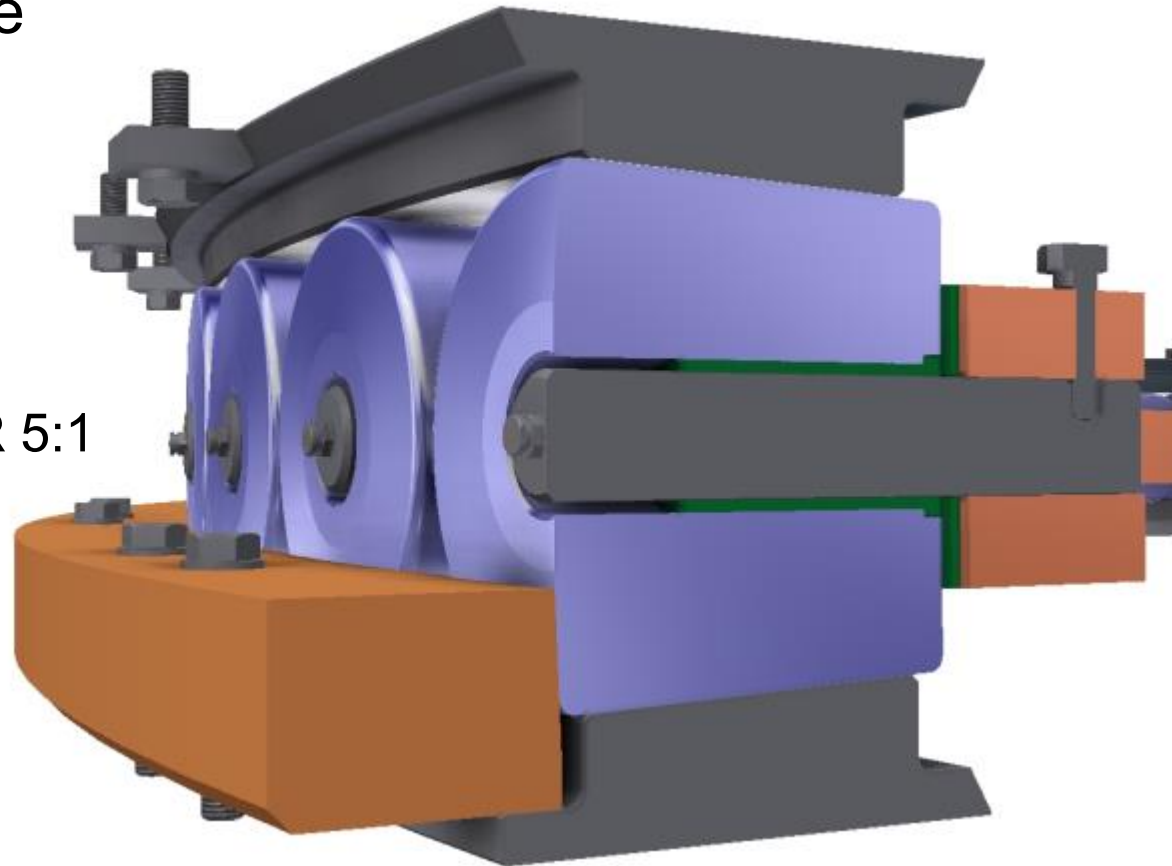
L&H Upgraded

# Swing System Style #2



# Issues and Upgrades

- Cannot Grow
- Limits Life



- ✓ ELIMINATE OUTER BAND FOR INCREASED SERVICE LIFE
- ✓ INCREASED THIRD RAIL THRUST AREA FACTOR 5:1
- ✓ L&H ADDS 10 ROLLERS

# Benefits



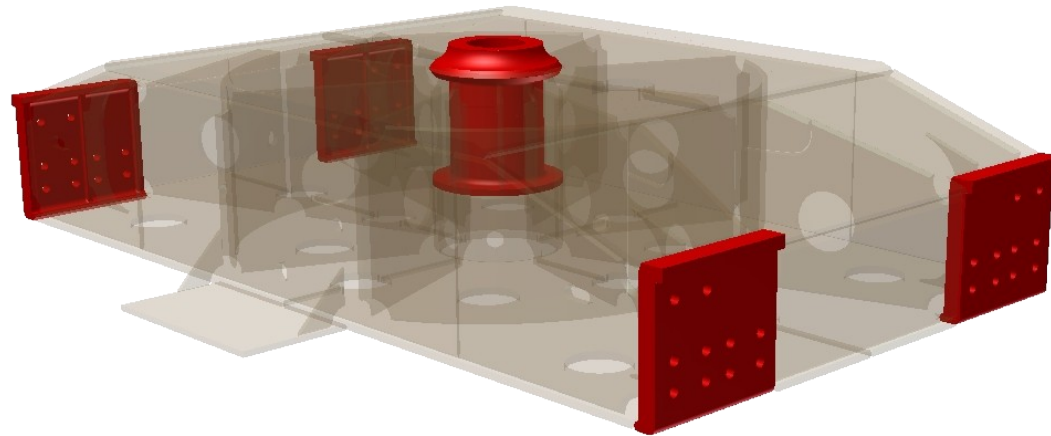
- ✓ Replaceable
  - ✓ Outer Forged Gear
  - ✓ Thrust Rail
- ✓ Increases Safety
- ✓ Does Not Require Full Removal
- ✓ Does Not Require Preparation of Carbody
- ✓ Reduces Change Out Time



# Carbody

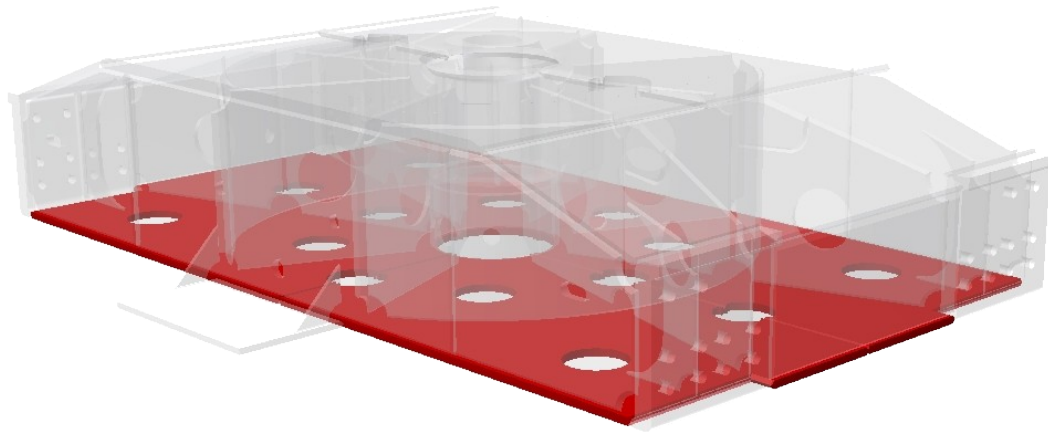


# Upgrades



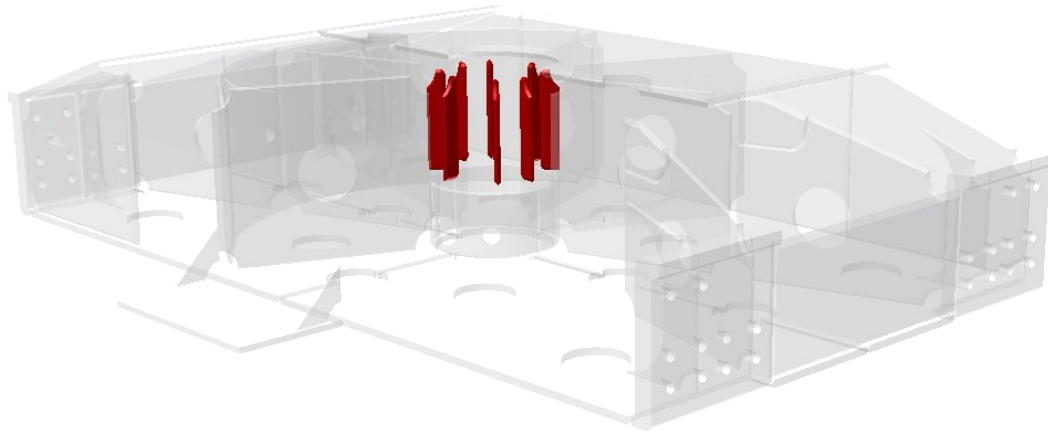
- ✓ Control Grain Structure
- ✓ Increased Strength/Expected Life

# Upgrades



- ✓ Increased bottom plate to 4" from 2-1/2"
- ✓ Relocated manhole/drain locations to reduce cracking

# Upgrades



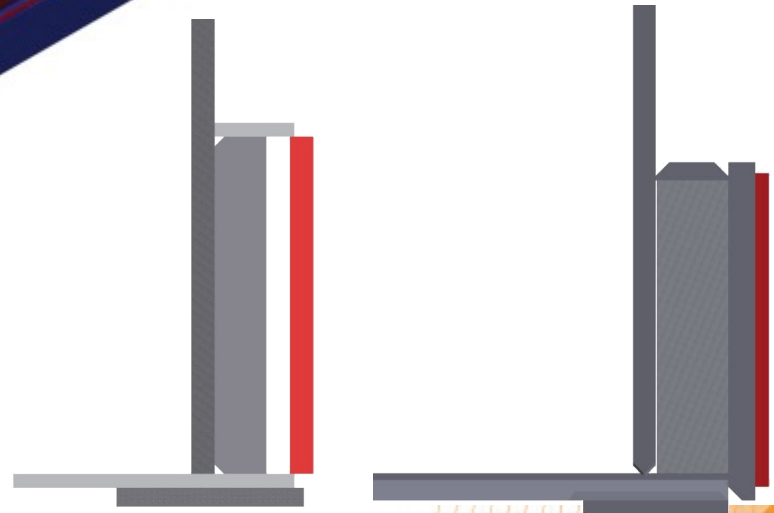
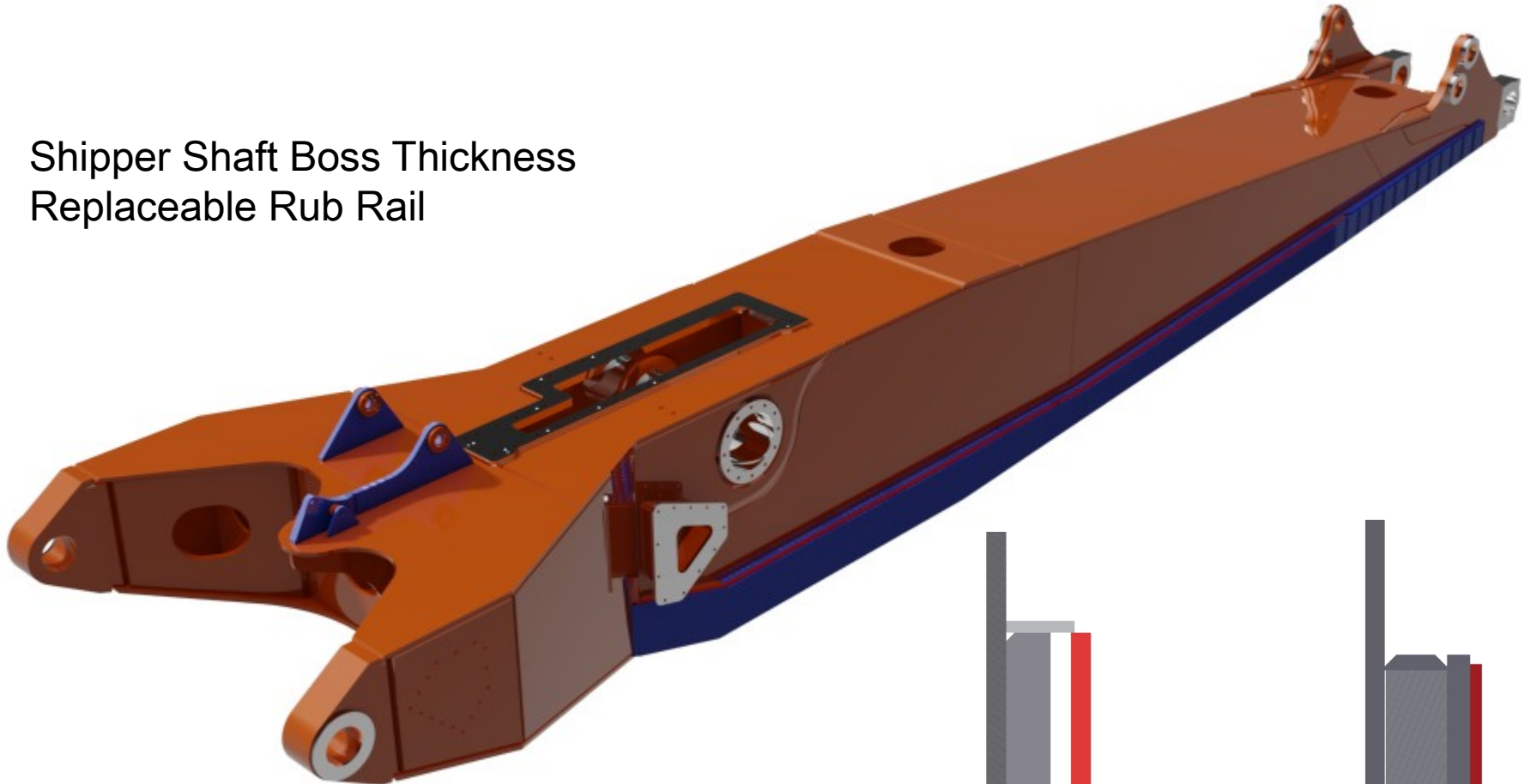
“Blades” added to increase strength and life

# Booms

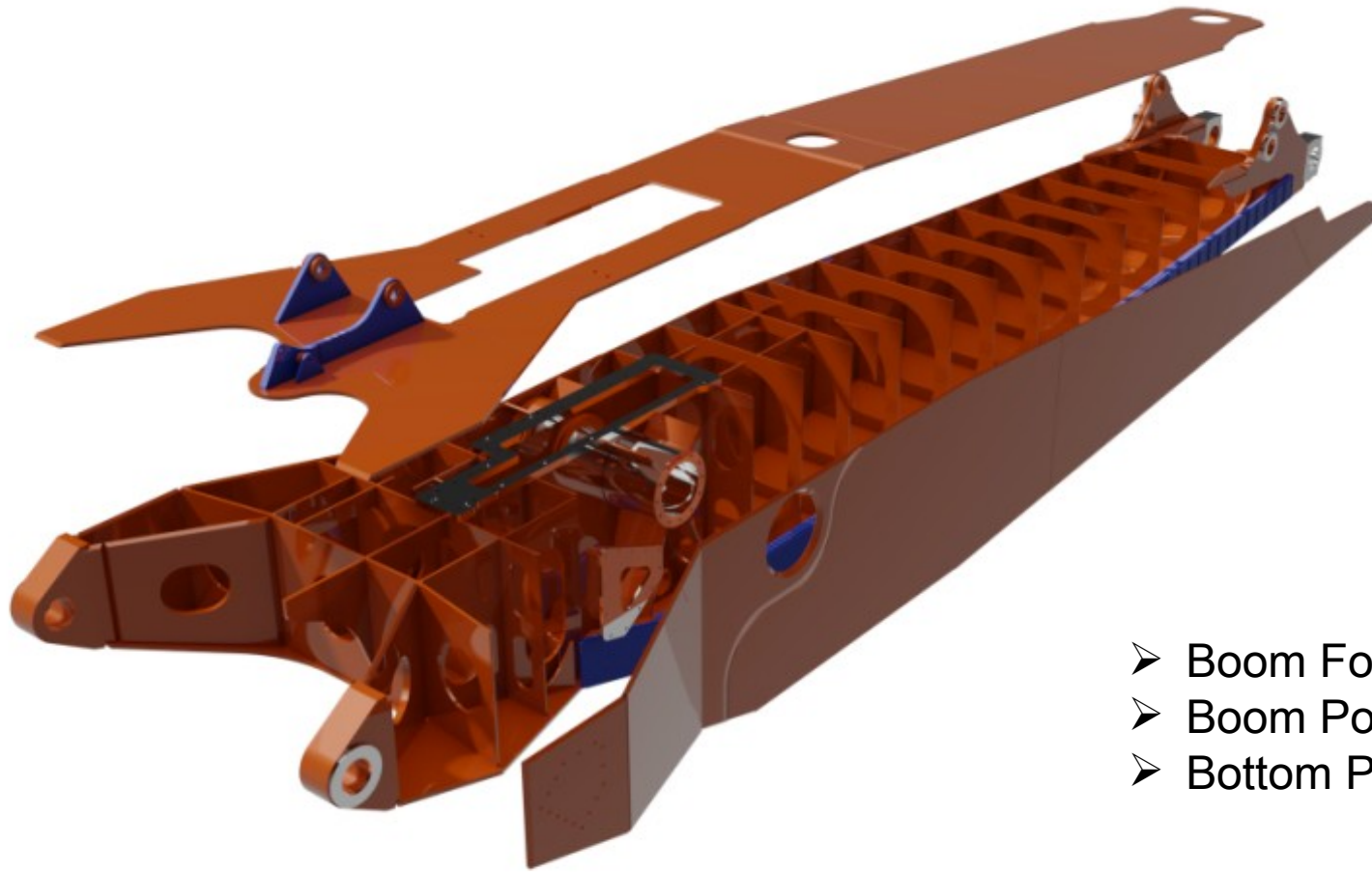


# Upgrades

Shipper Shaft Boss Thickness  
Replaceable Rub Rail



# Upgrades



- Boom Foot
- Boom Point
- Bottom Plate

# HR/HF





# Reclaimer



# Reclaimer



# Goal

- Improve Safety
- Reduce Maintenance Time
- Increase Maintenance Intervals
- Improve Sustainability
- Improve Production
- Lower Total Cost of Ownership

Thank You