

# Hydraulic Cylinder Assembly Bench Roller

**Patrick Taylor**  
**Graduate Engineer**

**Hastings Deering**



*'Improving health and safety in challenging times'*

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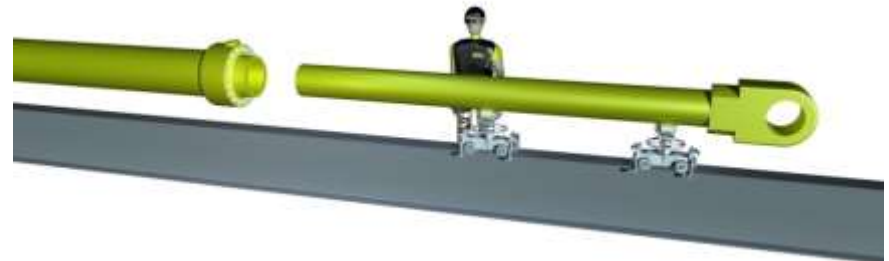
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# Background

- We rebuild large excavator cylinders at Hastings Deering Expanded Mining Products (EMP)
- Formerly part of the Bucyrus distribution arm.



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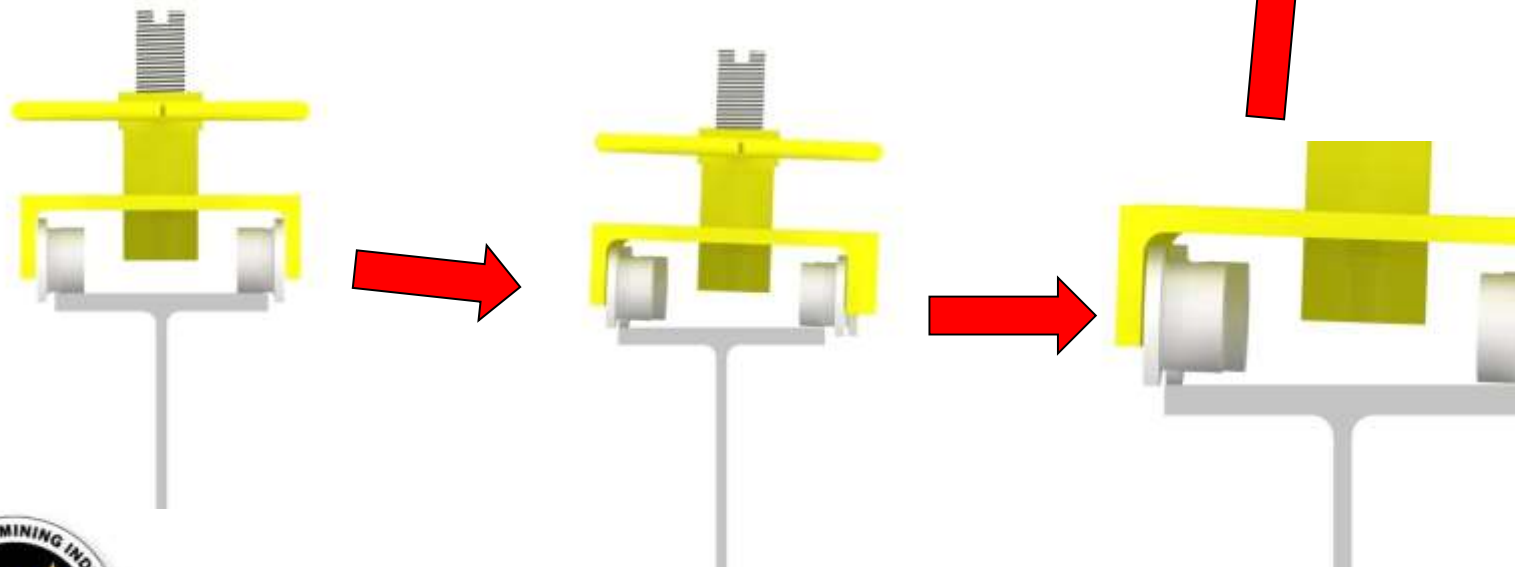
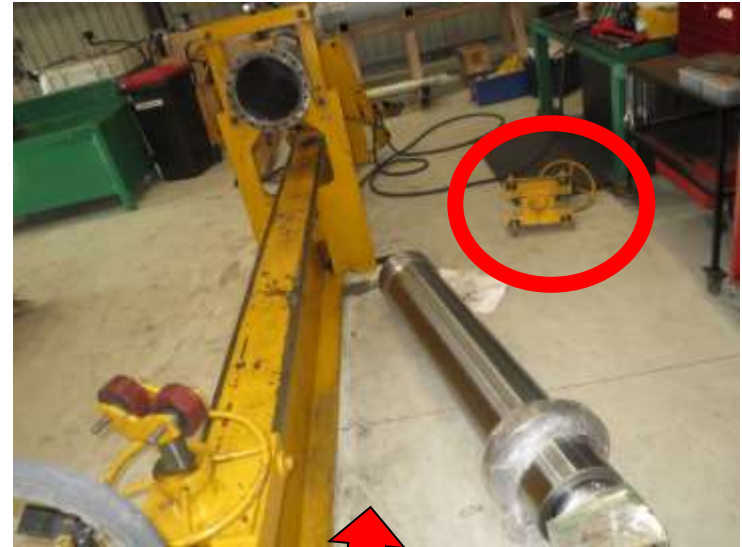
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## Problem/Initiative

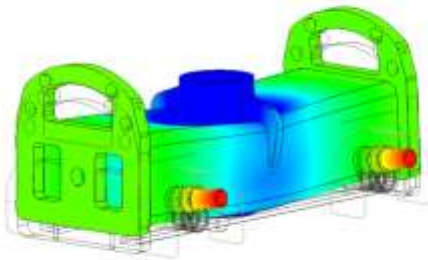
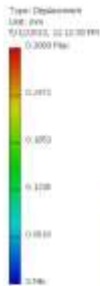
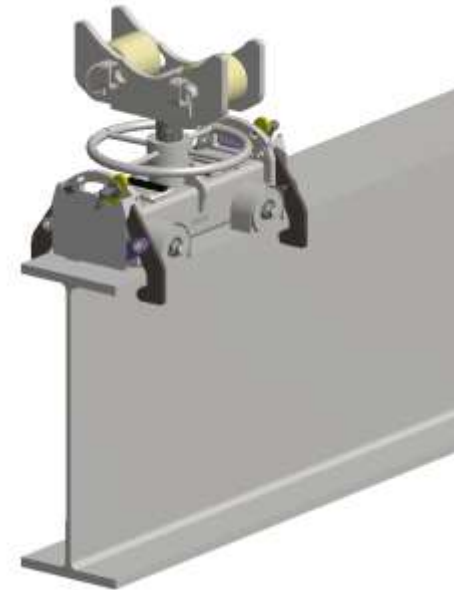
- We had a high potential incident.
- The trolley wheel tracked up onto the beam
- A cylinder rod fell to the ground.



# Solution Design and Innovation

## Features

- Lighter chassis design
- Dual roller position for different diameters
- Latch mechanism activated in one movement by a single operator from one side of the bench.
- Failsafe features - self closing and self locking



Closed position



Open position

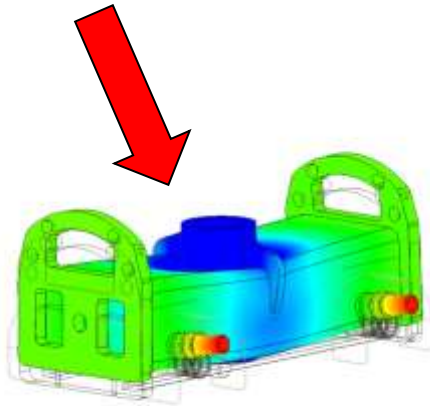
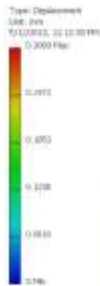




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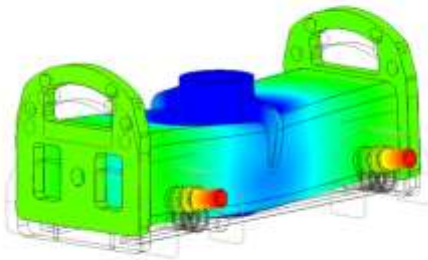
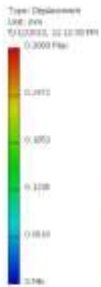
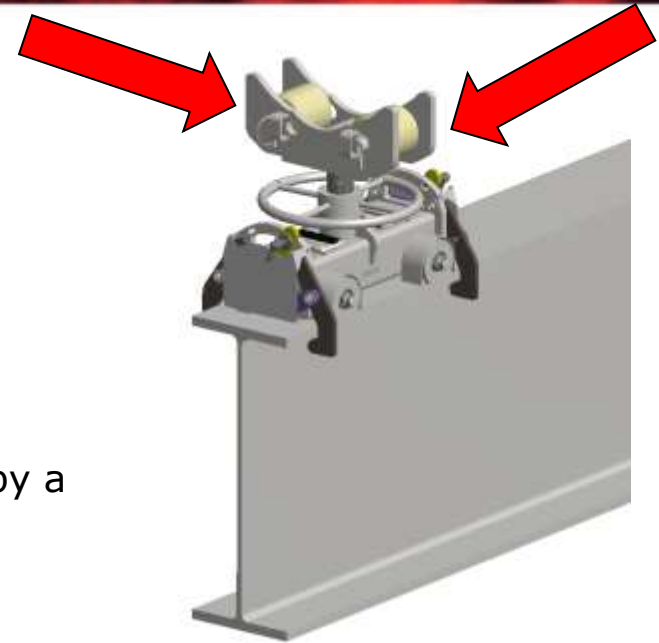
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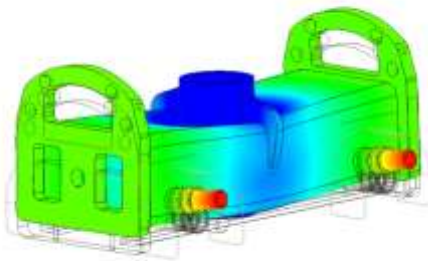
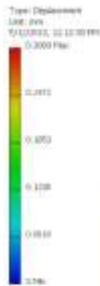
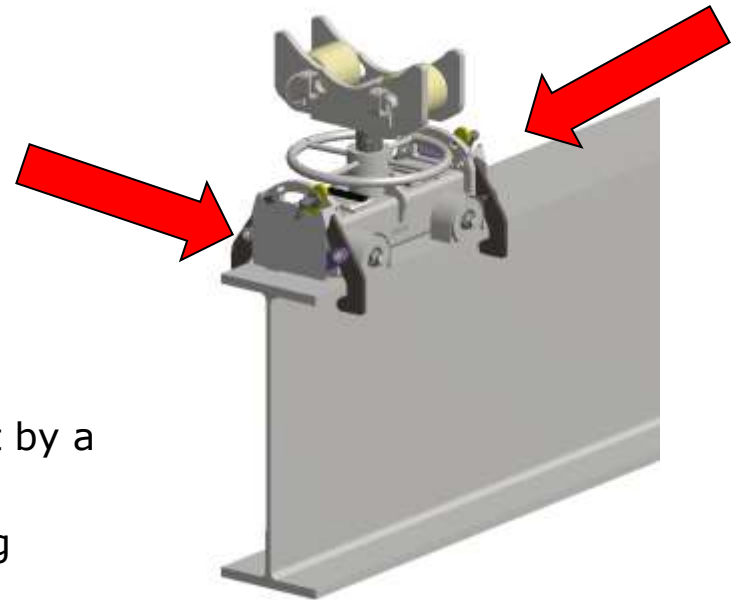
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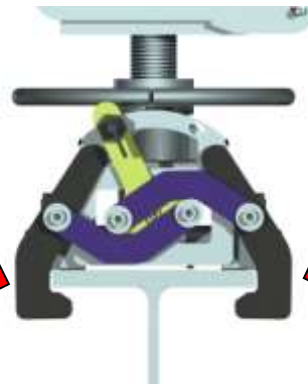
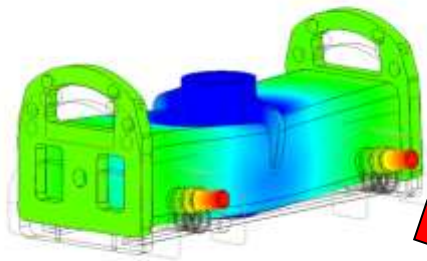
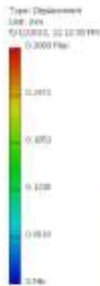
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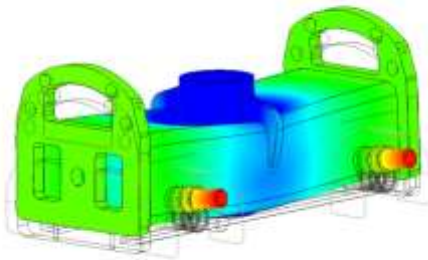
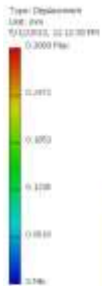
Open position



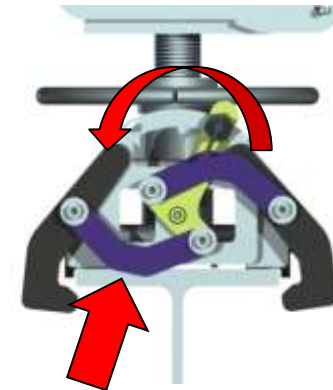
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# Benefits and Transferability

- Increased safety – no loss to productivity.
- Positive engagement between stakeholders has lead to better, safer design of an integrated solution.



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