

“Revolution” Modern Steam in the Making

AST CONFERENCE OCTOBER 2022

“Revolution” Progress Update

- Introduction
- Wheelsets
- Frame
- Pony Truck
- Motion
- Suspension
- Valve Gear
- Cylinders
- Next Steps

Introduction

- Progress:
 - Slower than we would like
 - Blame it on Covid?
 - The Day Job gets in the way!
 - Personal commitments
 - Too many pies, not enough fingers!
- Rolling chassis
 - Missed the conference deadline
 - So very close.....

Wheelsets

- Wheels cast and machined



Wheelsets

- Main Bearings assembled



Wheelsets

- Other axle components made



Wheelsets

- Assembly
 - Original assembler unable to complete the work.
- Now with John Dunn Engineering
 - Industrial Loco Owner
 - AST Member (soon)



Photo: John Dunn

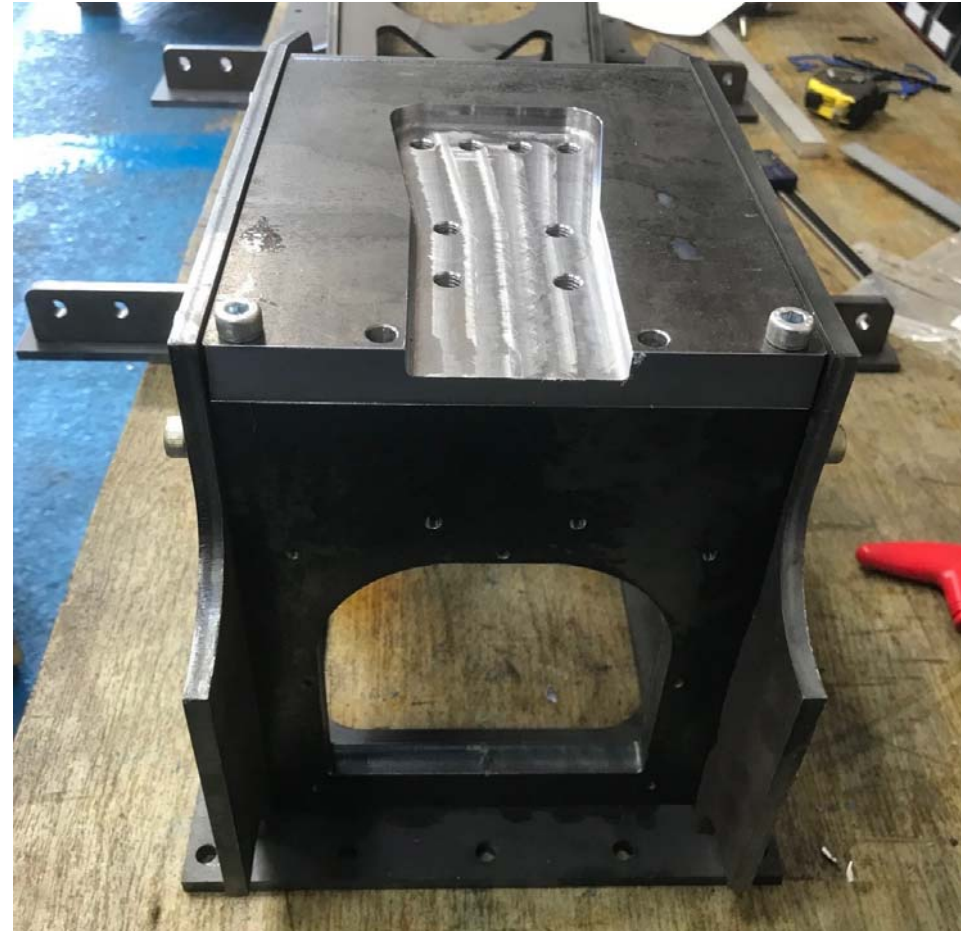
Frame

- Plates laser cut and delivered
 - Side plates had to be re-cut!



Frame

- Saddle Front and Base plates machined



Frame

- Welded by Kev
- Parts self-jigging
- Minimal distortion



Frame

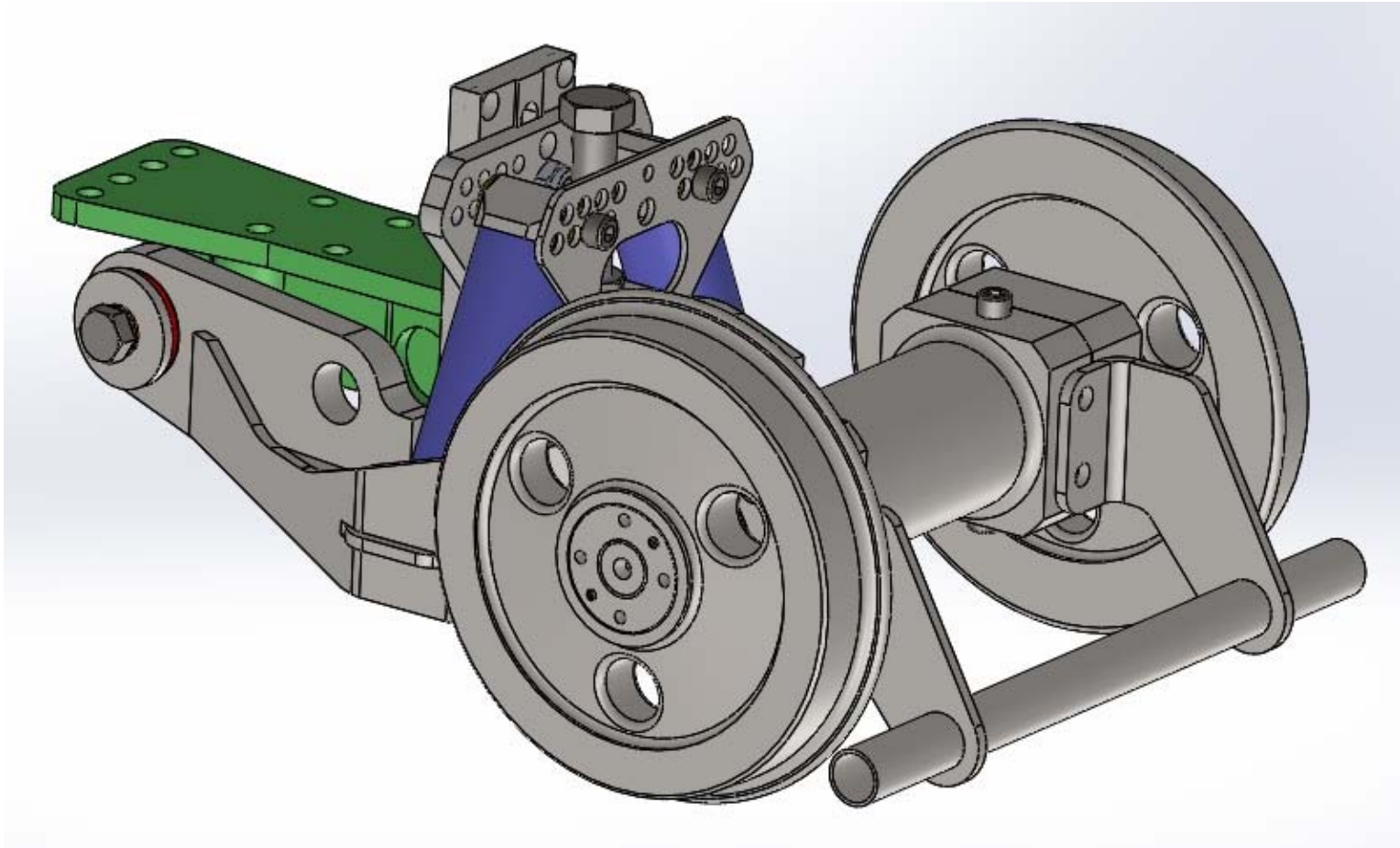


Frame



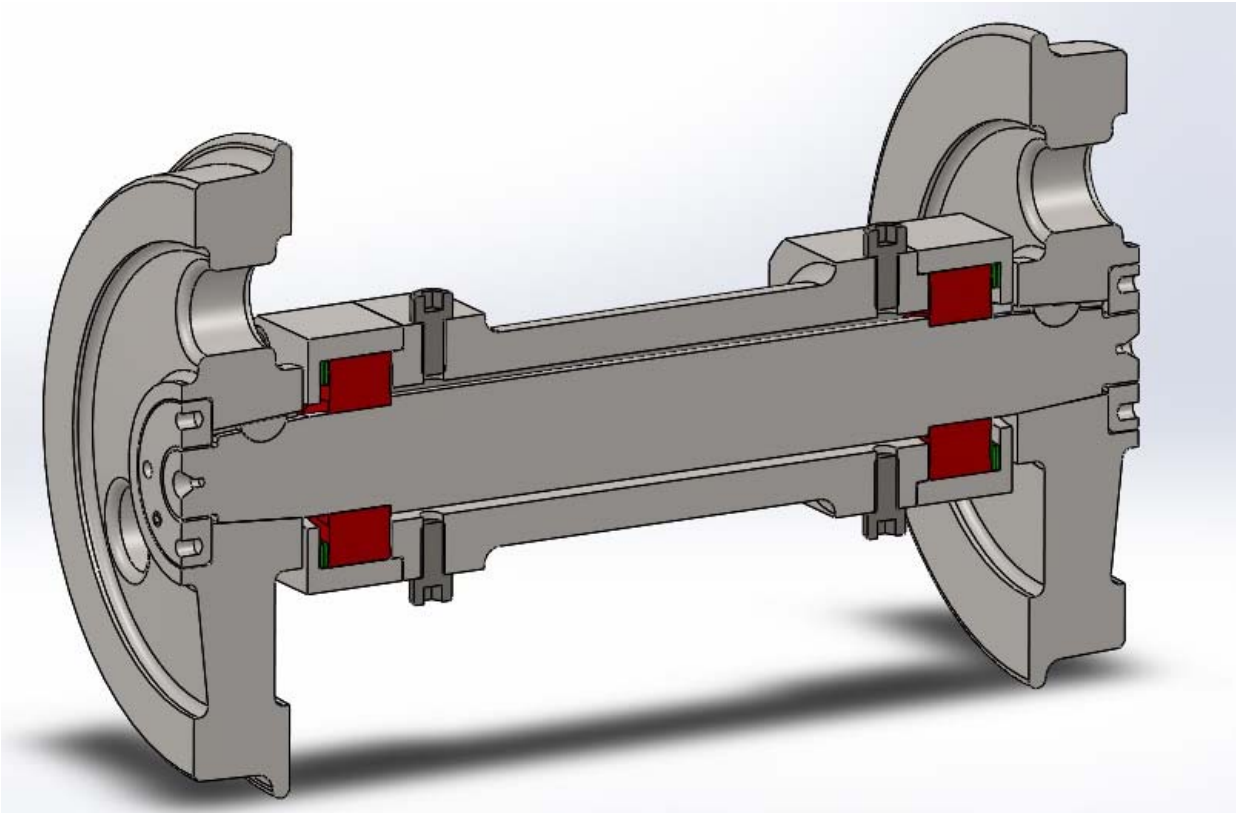
Pony Truck

- Design Completed
 - Simple load adjustment
 - Novel(ish) pivot design
 - Soft Springing
 - Outer wheel loading
 - Adjustable side control
 - Modular
 - Provision for:
 - Additional side spring
 - Lateral damping



Pony Truck

- Axle parts manufactured by Statfold Barn Engineering



Pony Truck

- Arm Assemblies
- Kit of laser profiled parts
- Many parts machined
- Welded assembly



Pony Truck

- Spring Caps
- Oilite bushes
- Chrome plated pivot pin
 - Upcycled from Mk4 gangway struts!



Pony Truck

- Arm fabrications



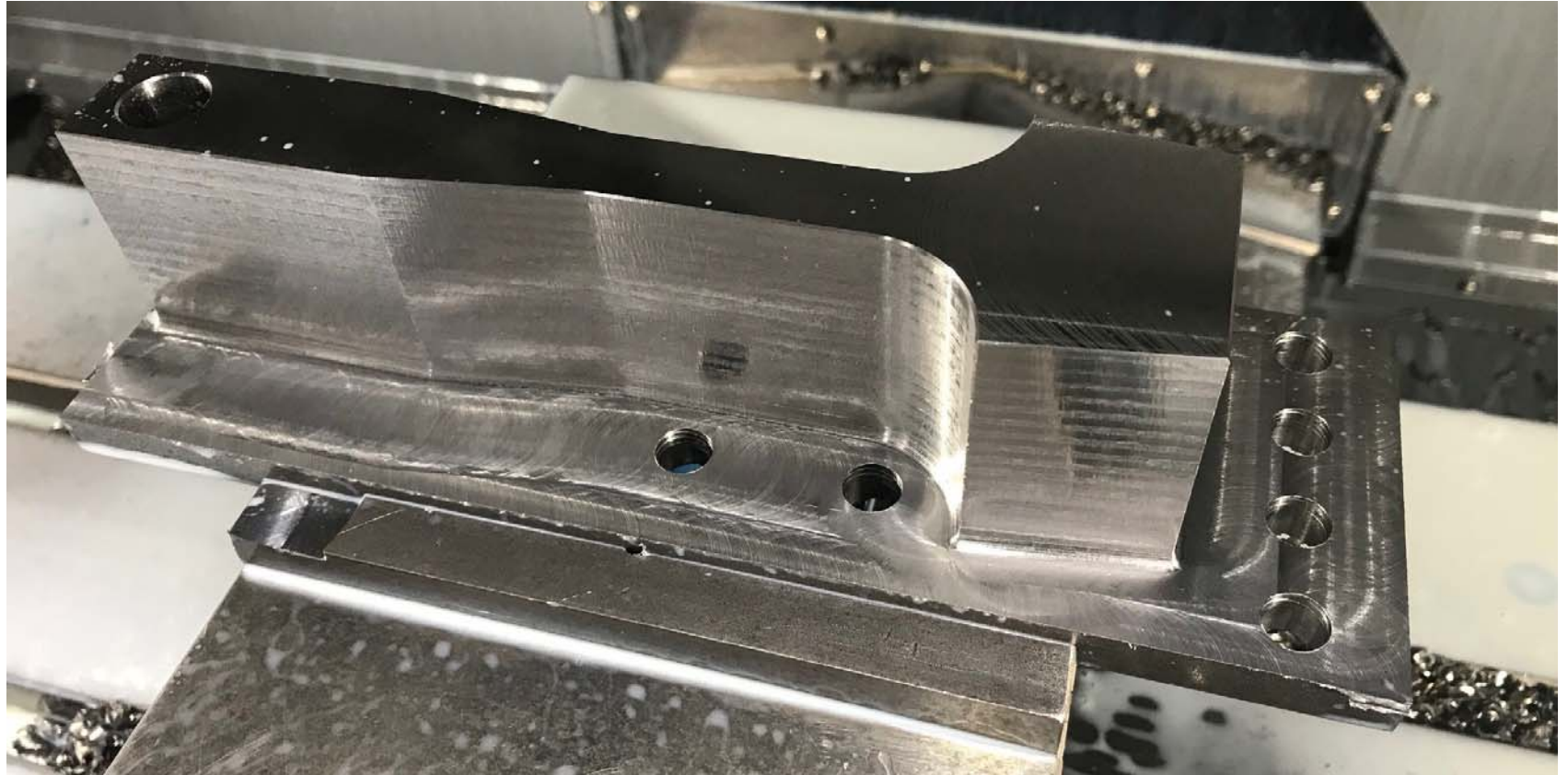
Pony Truck

- Pivot Block
- Machined from solid bar



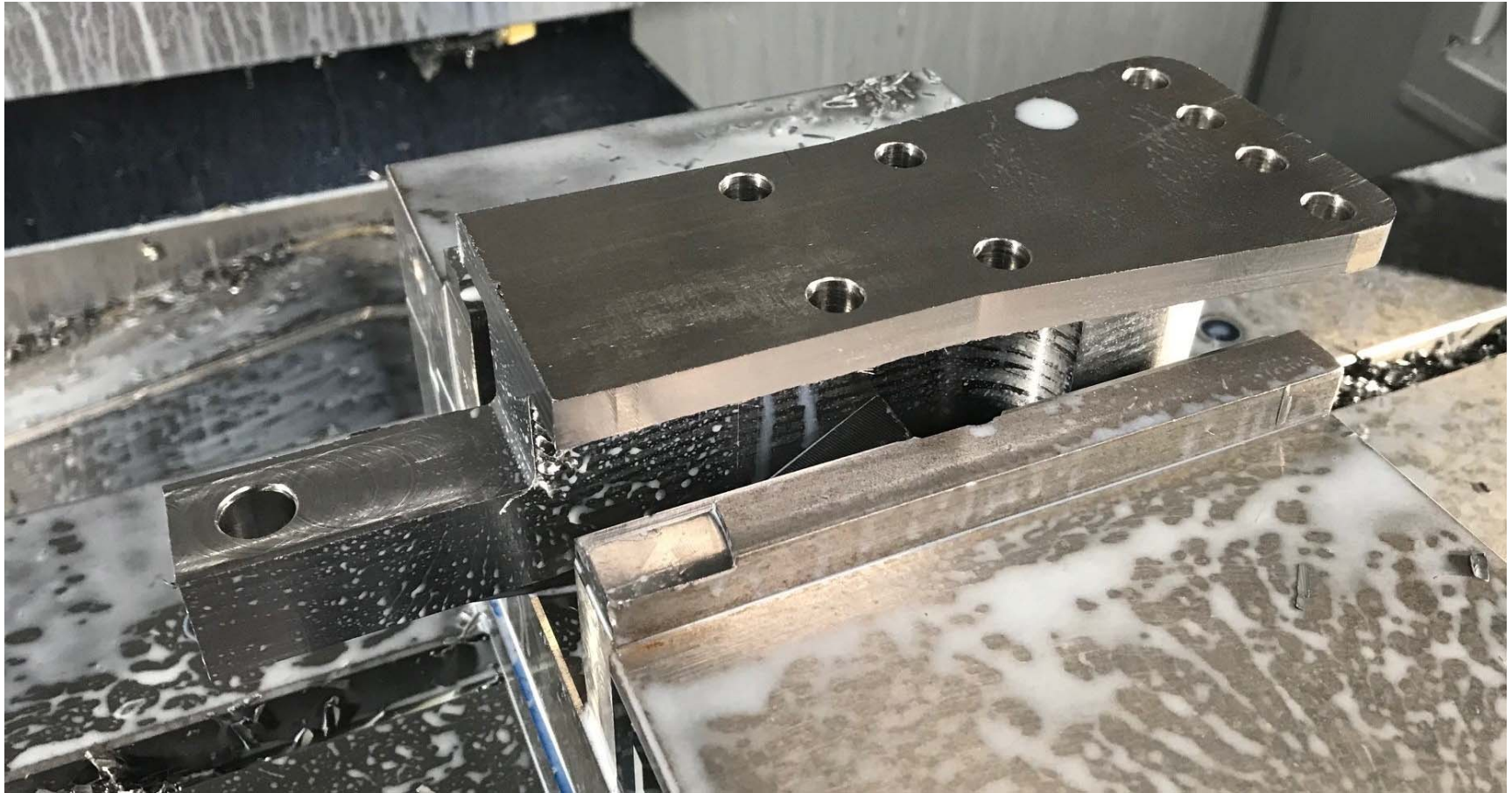
Pony Truck

- First Op



Pony Truck

○Second Op



Pony Truck

○ Finished



Pony Truck

- Adjuster assembly



Pony Truck

- Assembled Wheelset

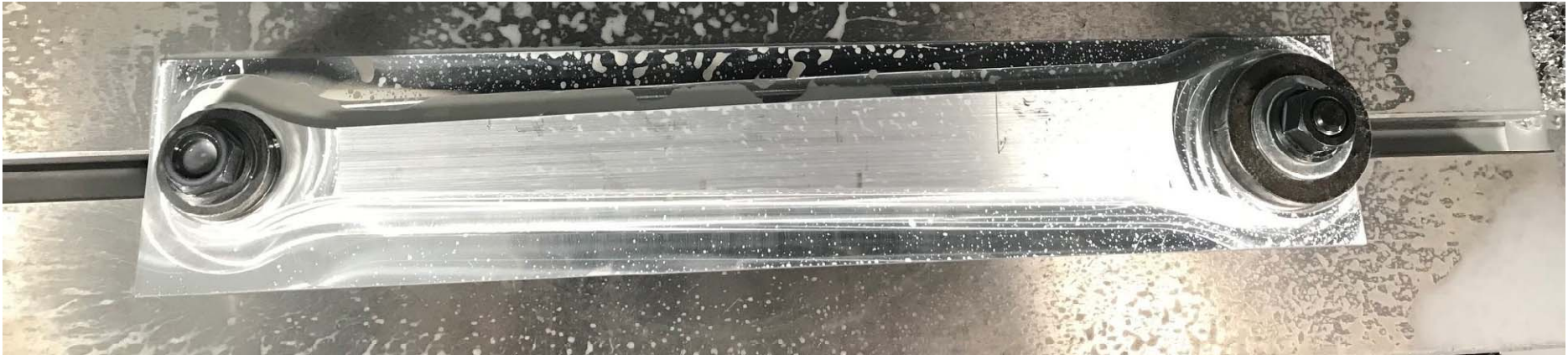


Motion

- Coupling and Connecting Rods
- Machined from Aluminium bar



Motion



Motion



Motion



Motion

- Anodised
- Bearings fitted



Motion

- Detail of knuckle joint
- Universal bolt!



Suspension

- Universal Bolt
 - Suspension links
 - Coupling rod knuckle
 - Little End
 - Drawbar
- 14 and counting



Suspension

- Main spring beams and axle keeps



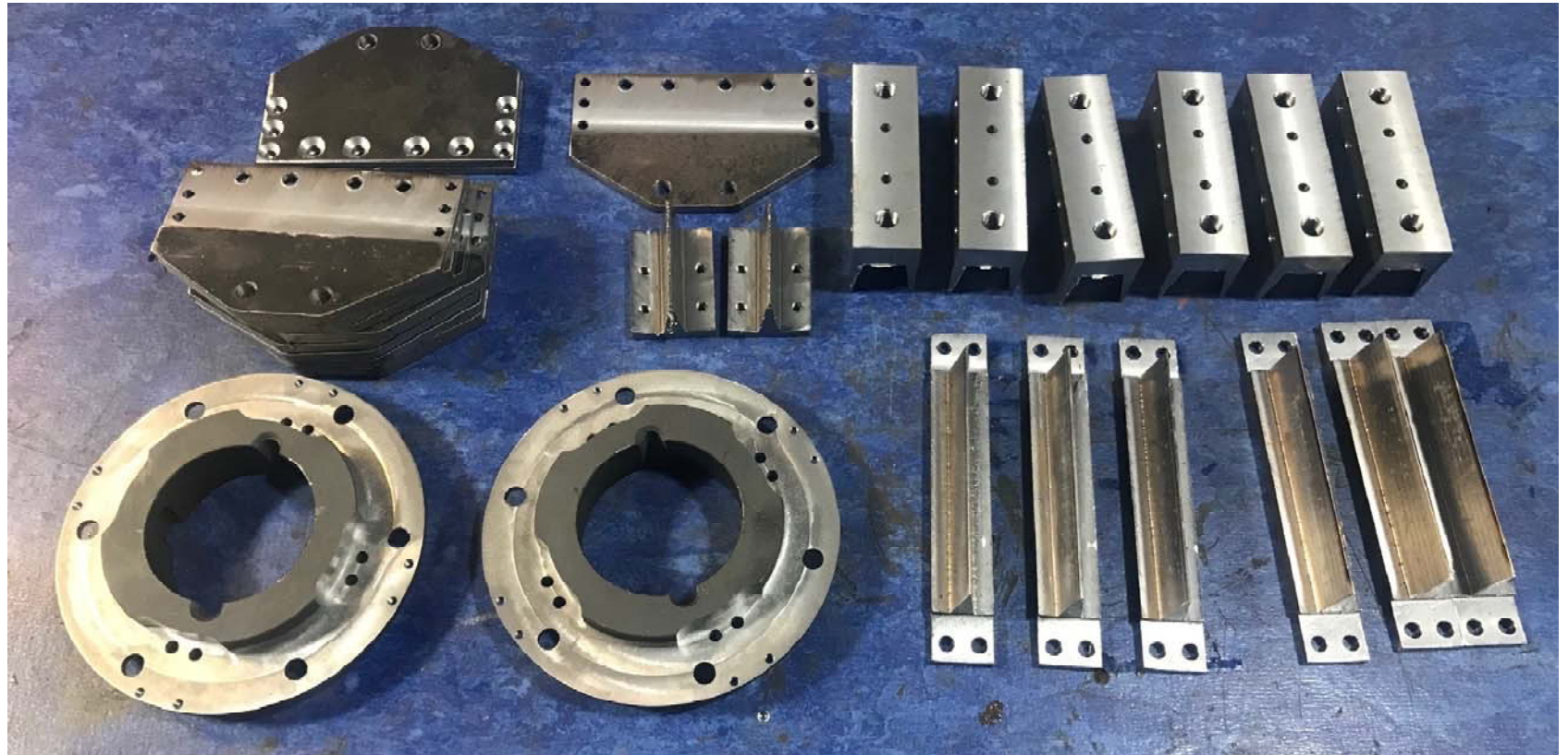
Suspension

- Trailing spring beams and axle keeps



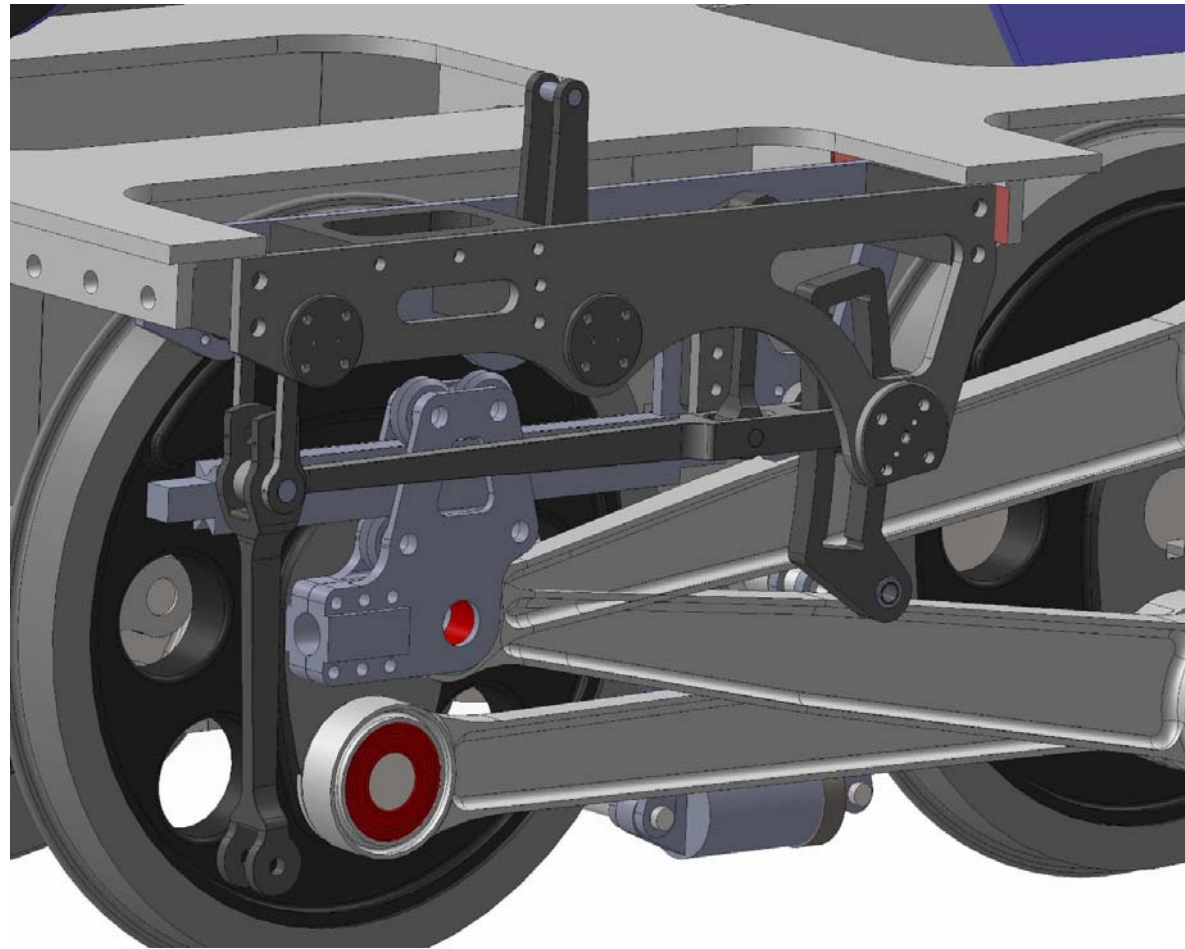
Suspension

- Suspension components



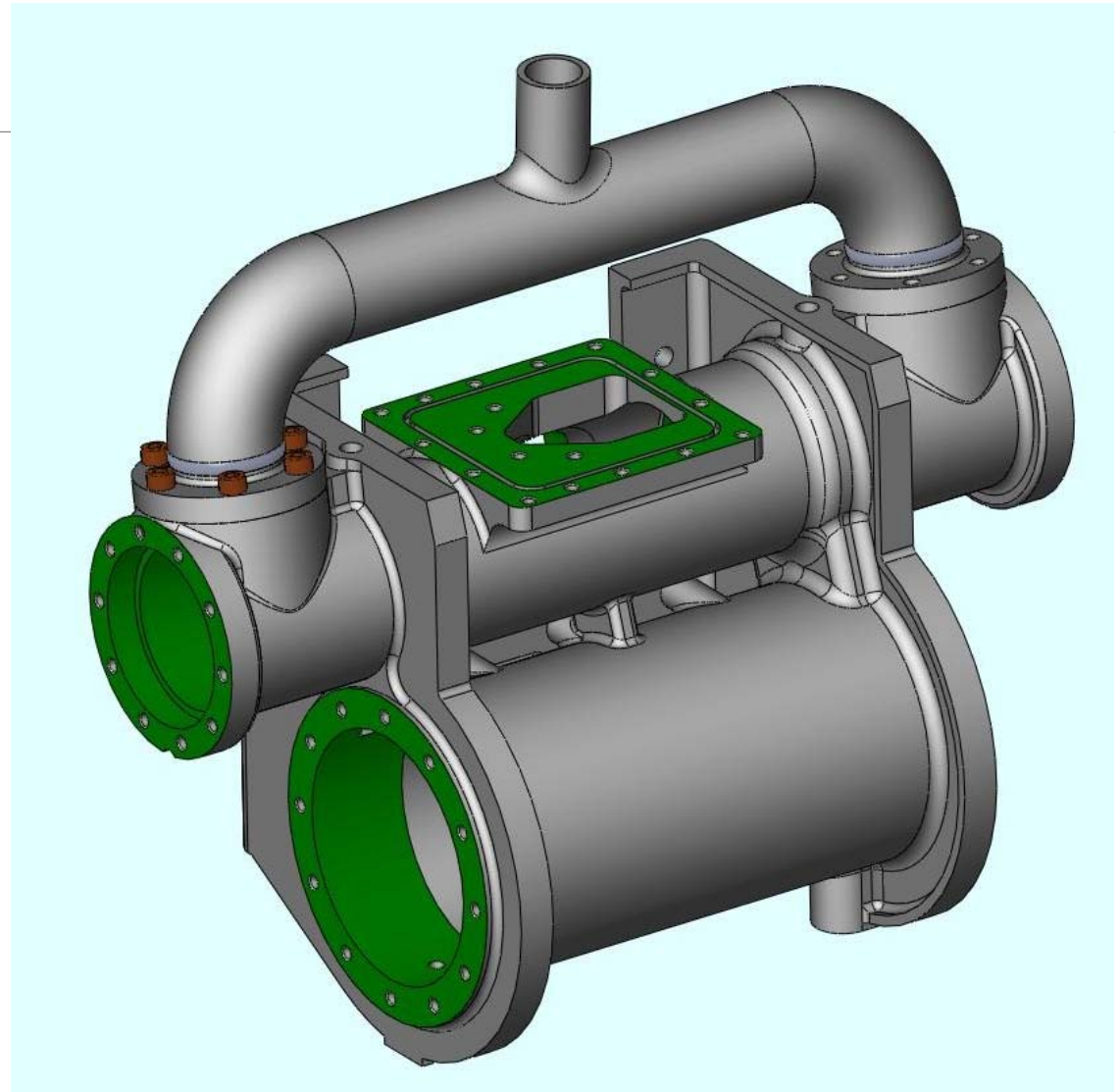
Valve Gear

- Richard Coleby's work
- Drawings completed
- Just needs someone to make it
- Offers?



Cylinders

- 3D Printed Pattern
- Patterns and Casting very expensive
- Alternative manufacturing methods being considered



Next Steps

- Machine Frame
- Complete Rolling Chassis
 - Rolling test at Stapleford
- Cylinder manufacture
- Valve gear manufacture
- Boiler design
- Cab & tender design
- MORE MONEY!

Thank You!

