

PUFFING BILLY RAILWAY

ENGINEERING SERVICES



PUFFINGBILLY.COM.AU

LOCATION



INTRODUCTION



SITUATED IN THE PICTURESQUE AND VERDANT DANDENONG RANGES, ONLY 60 MINUTES FROM MELBOURNE CBD, YOU WILL FIND ONE OF VICTORIA'S MOST HISTORIC AND MUCH LOVED ICONS – PUFFING BILLY RAILWAY.

The spectacular lush forests and fern gullies that surround one of Australia's oldest and best-preserved heritage steam railways, makes for a truly authentic and unique experience.

The living legend that is Puffing Billy was built in 1900 to serve the local communities that lived in the hills, carrying anything from passengers to timber, livestock, potatoes and plants. Today, the railway is a century old not-for-profit steam railway that connects and enriches people with the past, the environment and each other.

Puffing Billy, operated by the Emerald Tourist Railway Board, was only the second preserved steam railway in the world. Through a period spanning more than five decades, the restoration, maintenance and repair of our heritage fleet of locomotives and rolling stock has been undertaken on-site by the railway's Rolling Stock Branch.

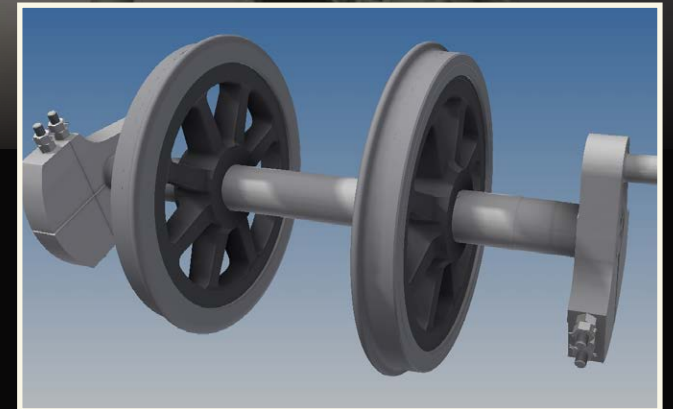
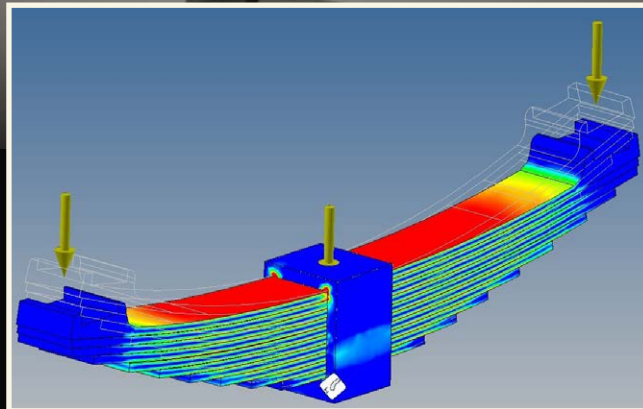
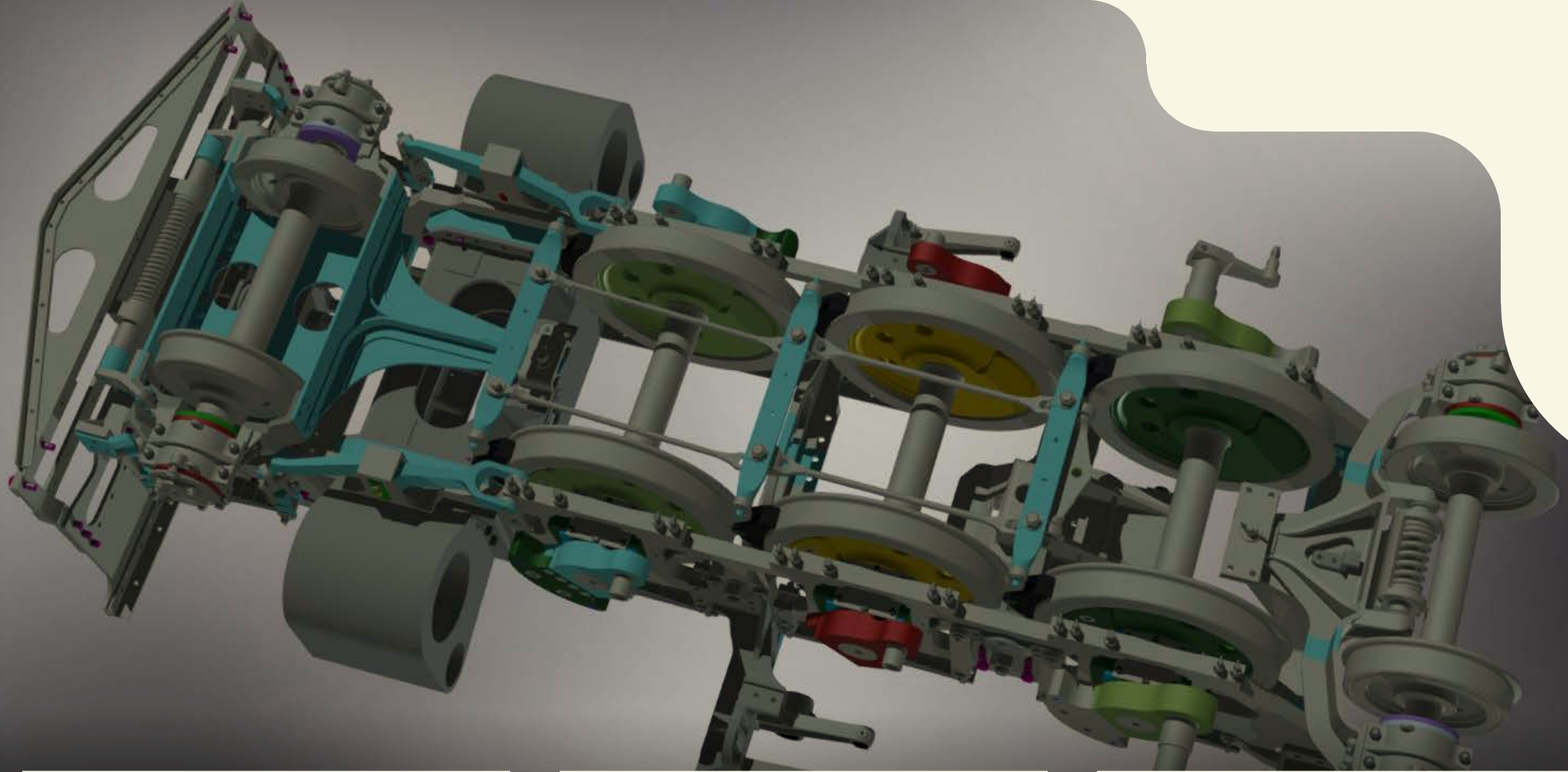
Located at Belgrave, the locomotive workshop is set up to maintain steam and diesel locomotives, with capacity to complete scheduled maintenance and repairs, major overhauls and complete restorations.

It is here that most of our heavy engineering tasks are carried out; machining; welding and fabrication; and assembly.

The carriage and wagon workshop at Emerald has a focus on high quality carpentry, painting and finishing, and carriage mechanical maintenance. With much in-depth experience around the design and construction of rolling stock, Puffing Billy is in the unique position of being able to manufacture carriages based on the specific needs of those who are required to maintain and operate them.

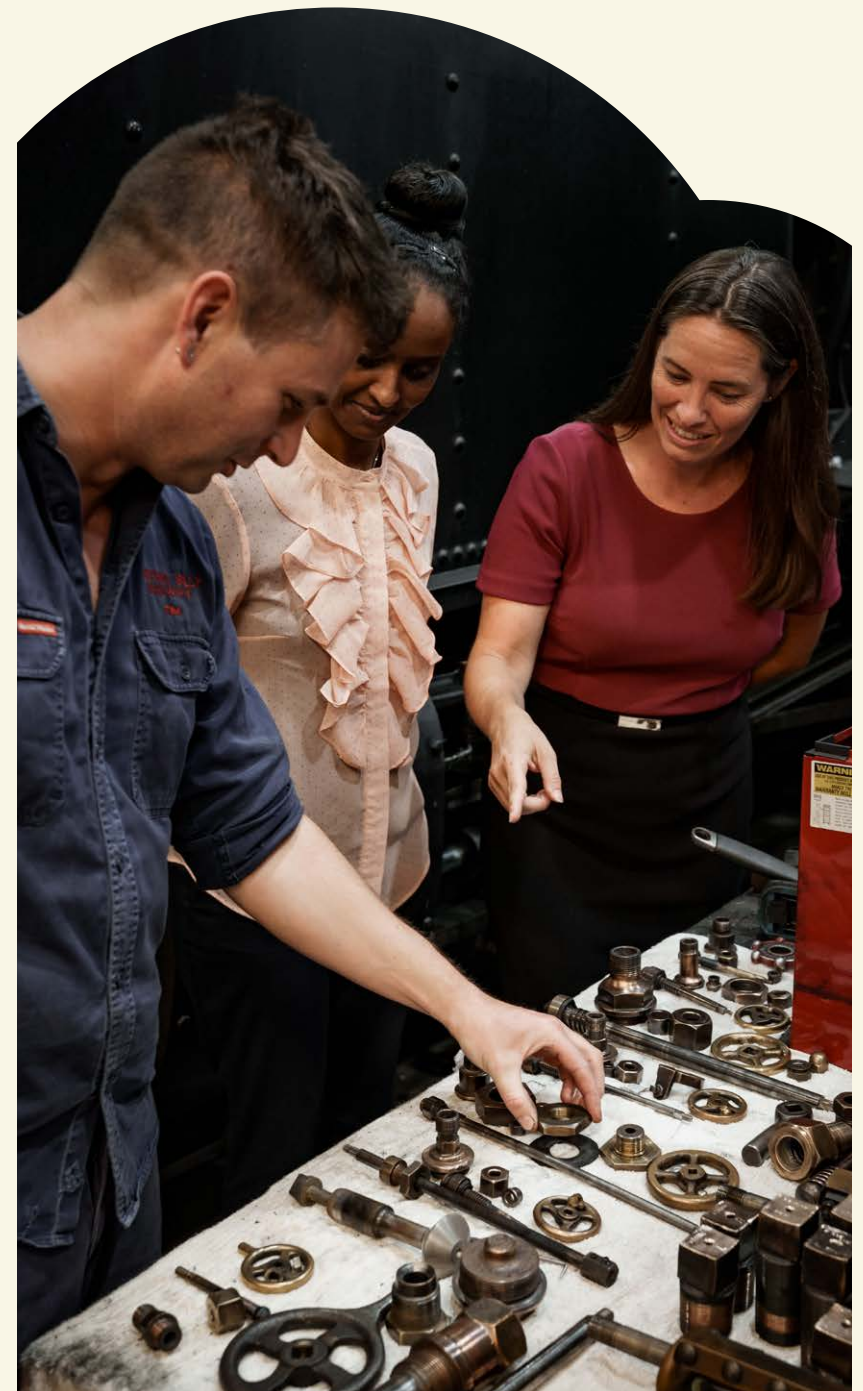
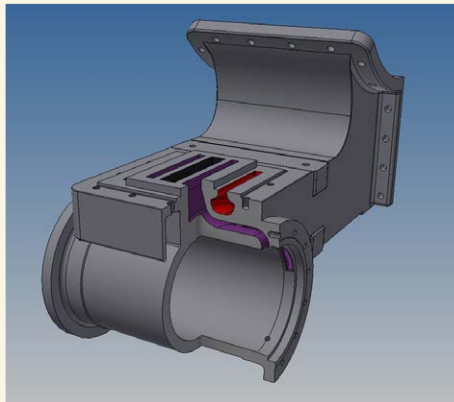
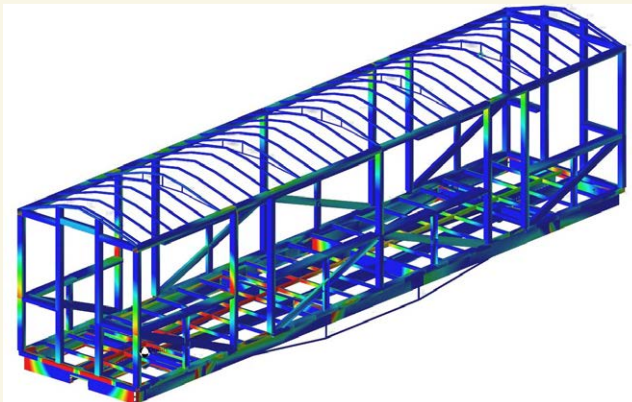
Our dedicated team of tradesmen, with a wide range of skills and a variety of backgrounds in industry, offer the perfect blend of traditional practices and ongoing innovation required to care for historic assets in a contemporary environment.

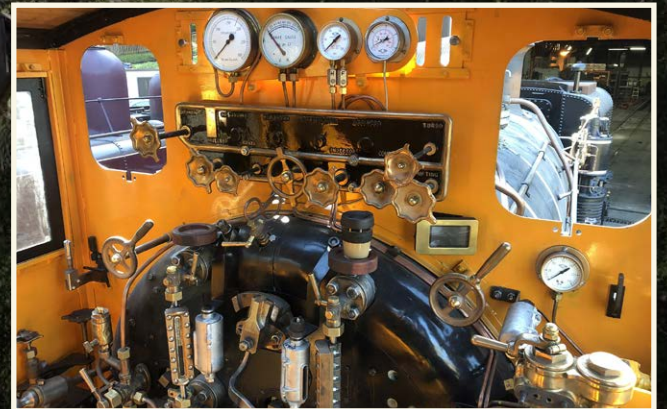
If you think our expertise and capability might be able to assist with one of your own projects, please get in touch. We would love to talk through your requirements and see what we can do to assist.



CAPABILITY – ENGINEERING

- Project management from the smallest parts to multi-million-dollar capital projects.
- Concept generation and mechanical design including virtual models, concept drawings and calculations.
- Engineering analysis, Finite Element Analysis, and component simulation supported by our robust quality assurance process.
- Simulation of mechanical systems (e.g. valvegear, linkage systems, etc.) to optimise system performance.
- 3D modelling and detailed drafting; from simple parts to complex assemblies and welded fabrications, including Bill of Materials and profile cutting layouts.
- Tourist and heritage railway rolling stock design, construction, and compliance management.
- Heritage rolling stock restoration planning and management.
- Compliance, asset management and maintenance system implementation.

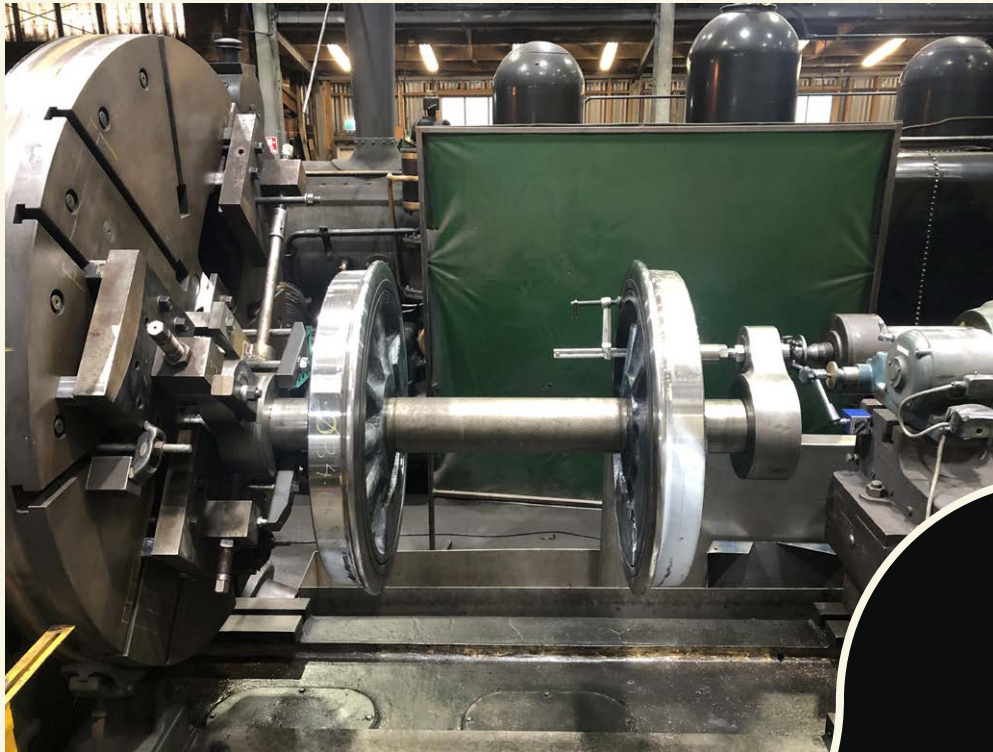




CAPABILITY – MECHANICAL

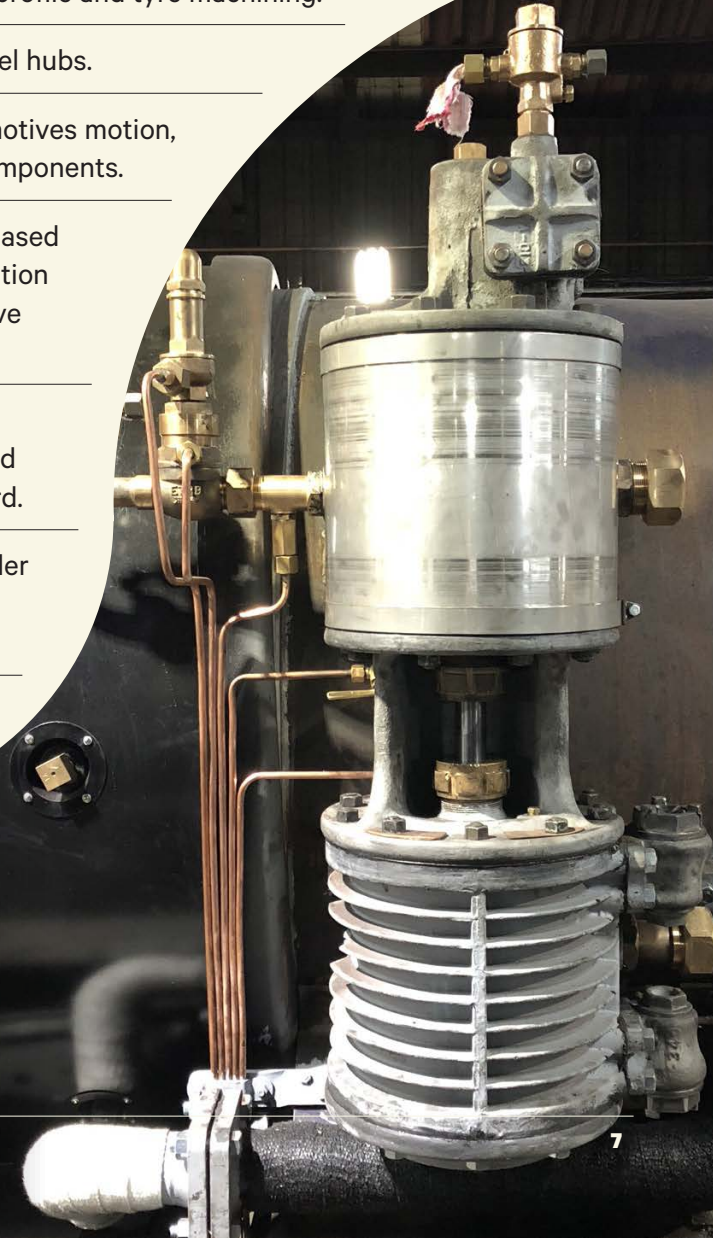
Our Belgrave Engineering workshop has a broad machining and fabrication capability, including:

- Turning up to a 1400mm diameter swing and 1950mm between centres.
- Milling, including CNC programmable.
- Fabrication and welding (pressure vessel, pressure pipe and structural).
- Surface and cylindrical grinding.
- Slotting.



Experience in maintaining and operating our own heritage fleet allows us to offer specific services such as:

- Axle journal grinding, wheel profile and tyre machining.
- Shrink fitting of tyres to wheel hubs.
- Overhaul and repair of locomotives motion, valvegear and associated components.
- Accurate valvegear setting based on dynamic computer simulation to ensure optimum locomotive performance.
- White metalling of side rod bearings, axlebox brasses and crossheads to a high standard.
- Overhauled and repair of boiler fitting (e.g. injectors, safety valves, check valves, etc.).





CAPABILITY – COACHBUILDING



Our Carriage and Wagon workshop, located in the heart of historic Emerald Township, can offer the following services:

- Detailed carpentry and joinery in a range of hard and soft woods.
- Painting booth for preparation and detailed finishing to a high standard, including oil and water-based paints and clear coats.
- Application of waterproof roofing membrane.
- Supply and fitting of weather blinds, seat cushions and upholstery.
- Specialist boiler-making and fabrication capacity.
- Air brake pipework and component installation, maintenance, and fault rectification.



Services specific to heritage railway rolling stock include:

- Minor repair to full restoration of wooden bodied carriages, wagons and vans.
- Sourcing or design and manufacturing of replacement components including hinges, door locks, handles, handrails and luggage racks.
- Replacement doors and windows, including glazing.
- Identifying original finishing and colour schemes.
- Lettering layout for signwriting or application of vinyl lettering.
- Repair or replacement of blinds, seating, and other upholstery.
- Manufacture of steel or replacement timber underframes and associated components.
- Design, manufacture and management of complete carriages.
- Restoration, repair or manufacture of bogies, wheelsets, couplers, draft-gear and brake rigging.

TRIPLE VALVE TEST BENCH

SHOP LINE

MAIN RESERVOIR

AUXILIARY RESERVOIR
TRAIN PIPE RESERVOIR

BRAKE CYLINDER RESERVOIR



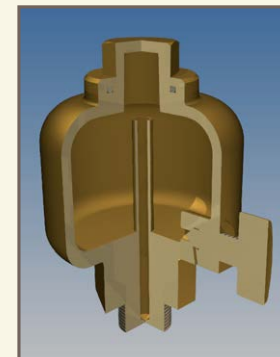
CAPABILITY – WESTINGHOUSE AIR BRAKE

Originally part of the Victorian Railways, Puffing Billy has utilised the Westinghouse air braking system from the outset. As such, our team is highly skilled in the maintenance and repair of all components of the Westinghouse braking system. Our capability includes:

- Repair and restoration of all sizes of air compressor, particularly 'B', 'C' and 'D' class.
- Manufacture of air compressors and components to customer requirements.
- Manufacture of brake system components to customer requirements.
- Overhaul of compressors for diesel locomotives.
- Supply and fitting of new piston rings and conversion of air end to oil-free operation.
- Service, repair and testing of feed valves, drivers brake valves – particularly No. 4 and No. 17 – and triple valves.
- Overhaul and repair of brake cylinders.
- Design and manufacture of main reservoirs and auxiliary reservoirs.

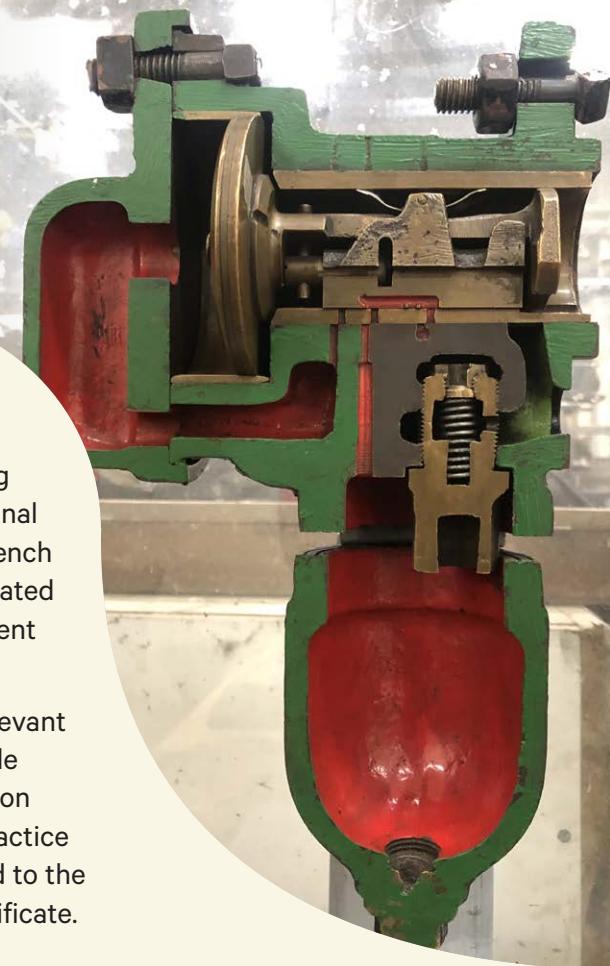
IF YOUR COMPRESSOR HAS FAILED AND YOU ARE IN URGENT NEED OF A SPARE, WE MAY BE ABLE TO HELP!

We maintain a number of spare air compressors ready for use. Whilst your failed compressor is with us for inspection, testing and repair, we may be able to provide you with a working spare to keep your operation on track.



The brake room at Puffing Billy incorporates an original Victorian Railways test bench with independently calibrated gauges to ensure consistent accuracy in testing.

Following overhaul, all relevant components undergo code tests to standards based on the Victorian Railways practice cards and will be supplied to the customer with a test certificate.





GET IN TOUCH

If you have any heritage rail related engineering requirements, feel free to get in touch with us and arrange a time to visit.

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