

ZERO PSI SYSTEM



Century Mining Alliance

BACKGROUND

- At the Century Mining Alliance our focus is to achieve 0 psi Tyre, Rim and Wheel removals from all fleet under all conditions SAFELY. Our focus on 0 psi stems from the investigation of a tyre-related fatality on site. One of the key recommendations was to have a hard barrier to prevent further injuries or fatalities.
- Dangers involved with tyre, rim / wheel assembly removals are well documented.
- With a recurring theme tyres not deflated prior to removal.
- There is a specific focus on demountable rims.



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- What is a hard barrier?
- We decided that a hard barrier is a system that will remove a problem every time with out failure.
- We have devised a complete system that unfortunately is going to take us a little longer to affect.
- So we looked at what we could do now.
- The answer was the double gutter rim.



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AT CENTURY MINE

- In the next 12 months, the Century tyre bay team will complete approx 1000 scheduled tyre changes on Komatsu 830E rear dump trucks.
- The team will also carry out more than 500 scheduled changes on other rubber-tyred equipment on site (+ we allow 10 per cent for unscheduled tyre changes).
- Each time, safe deflation an issue.
- After much discussion, debate and risk assessments it was found for our application that 15 psi was the correct deflation pressure and a SWI was developed around this.
- This is what we work to while completing all the changes need to safely and effectively move to 0 psi



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INNOVATING CHANGE

- Innovation at CMA feeds our belief that if changes are made that are easy and user friendly, employees will embrace them and incorporate them into every day practice, leading to cultural change.
- In itself this presentation is not a single innovation, it's a combination of two separate innovations one that existed already and the other that needed to be invented to use the first one.
- Together they combine to form the first step in our goal of safe and effect tyre, rim/wheel removals at 0 psi
- A 0 psi system for conducting safe tyre rim/wheel assembly removals.



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- **BEAD BREAKING TOOL**
 - Existing innovation is the Rimex Double Gutter Rim
 - New Innovation CMA in conjunction with Rimex developed the bead breaking tool to enable tyre bay personnel to break the back bead on Positions 4 and 5 on the Komatsu 830E dump truck.
 - Once we had the bead breaking tool we were then able to fit and utilise the Rimex TSR Double Gutter Rim



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- **TSRDG RIMS**

- Successful use of the bead breaking tool resulted in the world's first effective installation of Rimex double gutter rims on Komatsu 830E haul trucks.
- Rimex TSRDG rims were tested on 830E truck in mining conditions for 1000 hours with total success
- Tyre changes were conducted effectively and safety and the Bead Breaker worked.
- Risk assessments were completed, resulting in tyre bay team developing job specific JSAs and SWIs.



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BEAD BREAKER TOOL



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RESULTS

- Tyres on 830 Komatsu trucks fitted with TSRDG rims are able to be changed at zero psi.
- Risk associated with impact gun use reduced.
- Down time during tyre maintenance reduced.
- Bead breaker costs \$300 to manufacture.
- Brackets were made on site



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Thank
you