



Century Mining Alliance

TRACK ROLLER INSTALLER





THE PROBLEM

- Current practice
 - Roller placed on forklift tines.
 - Employees manually handle roller into place and hold in position, another employee fits retaining caps.
 - Manual handling is more difficult when machinery repairs take place on coarse rock, broken or wet ground.
 - Manual handling causes physical strain to upper torso and limbs, and potential crush and pinch injuries to hands.
 - Manual handling is inefficient - requires four fitters to mount one roller.





THE SOLUTION

- Part one...
 - The initial concept adapted an existing device to be mounted on forklift tine.
 - It was only feasible for workshop repairs and required space to maneuver the forklift.
 - The forklift was hazardous to roller change out personnel as they were lying beneath the elevated forklift tines and holding the roller in position while retaining caps were installed.





THE SOLUTION

- Part two...
 - The revised concept used a counterweight system, adding stability and allowing three-dimensional movement.
 - It can be suspended using jib attachments, overhead or mobile cranes.
 - Offers greater maneuverability for positioning the roller, which improves safety and reduces job turnaround time.
 - Lifting device certified by an engineer.
 - \$1500 unit cost quickly returned by making two full track roller change outs safer and quicker.





STEP ONE

- Mount counter weight roller into position using safe lifting methods





STEP TWO

- Position cradle under track roller
- Remove mounting bolts





STEP THREE

- Remove roller from mounting position
- Counterweight roller allows easier control of movement
- Carry wheels help control movement





STEP FOUR

- Install replacement roller in reverse order





Track Roller Installer



RISK RATING

- Before track roller installer
 - Possible + Moderate = High 15
 - Roller weight (60-100kg) and location creates high risk of sprains and strains when using convectional manual handling methods

LIKELIHOOD	CONSEQUENCE				
	INSIGNIFICANT	MINOR	MODERATE	MAJOR	CATASTROPHIC
ALMOST CERTAIN	High 9	High 16	Extreme 20	Extreme 23	Extreme 25
LIKELY	Moderate 6	High 13	High 18	Extreme 22	Extreme 24
POSSIBLE	Low 4	Moderate 11	High 15	Extreme 19	Extreme 21
UNLIKELY	Low 2	Low 7	Moderate 12	High 14	Extreme 17
RARE	Low 1	Low 3	Moderate 5	High 8	High 10





RISK RATING

- Using track roller installer
 - Rating: Rare + Minor = Low 3
 - Eliminating heavy manual handling reduces soft tissue injury risk.
 - Uncontrolled movement risk reduced.

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RISK ASSESSMENT

- No hazards introduced:
 - Low centre of gravity.
 - Fitters stand clear of attachment point.
 - Increased visibility between crane/forklift operator and controlling fitter.
 - Improved ergonomics and reduced upper body stress - fitters are no longer lying beneath suspended loads.





BENEFITS

- Reduced physical exertion.
- Increased productivity – two fitters can remove and replace roller in half the time.
- No accidents or injuries recorded since track roller installer introduced.
 - Group immediately responsible (ancillary fitters) number 45 across three crews.
 - Uncommon task means potential for injury increases due to unfamiliarity.





ADAPTABILITY

- Suitable for all industries that use track machinery.
- Simple design allows construction to suit any size machine application.





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Thank
you

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