

B&D TIRE HANDLER STATION: A KEY COMPONENT TO THE BEST TOOLING PACKAGE FOR HAUL TRUCKS IN THE WORLD.

SITE

Copper mine in Chile that is currently operating 18 Komatsu 830Es and 14 Komatsu 930Es with an indoor maintenance shop that houses 4 bays.

OBJECTIVES

- Improve safety for service technicians
- Increase truck utilization
- Keep the bay doors closed to reduce shop heating costs
- Reduce operating costs

OUTCOME

- No reported worker injuries as a result of maintenance and repairs on the component
- 1376 hours or 50% increased truck utilization for maintenance requiring tire changes
- Significant expectations for reducing long-term operating costs
- Reducing carbon footprint with a Tier 4 emissions piece of equipment (Wheel Loader) replaced with implementation of a Tier 2 emissions piece of equipment (B&D Tire Handler Station)



CHALLENGE:

Maintaining a comfortable, safe and efficient work place for haulage trucks in maintenance shops is becoming increasingly difficult. Worldwide, mine management is scrutinized by governments to improve working conditions and to reduce their carbon footprint. For mines where temperatures reach extreme lows it is a huge challenge to keep the shop warm and ensure that the equipment emissions remain low. With continuous haul truck use in a demanding environment, a rigorous maintenance schedule is critical to keeping a fleet in operation. Whether it be proactive maintenance or unexpected equipment failures, a variety of repairs on these massive haul trucks are done in confined spaces and require the tire to be removed. Traditional tire removal using a wheel loader with a tire manipulator requires the bay doors to be open wide as this 50,000 kg machine runs on a 500 HP motor and needs a large space to operate (38 feet long by 12 feet wide). As a result, when the tire has to be removed for maintenance and repair, a large area must be cleared to accommodate the wheel loader and the shop loses all of its heat while keeping the doors open for the procedure.

SOLUTION:

Once consultation began with B&D Manufacturing, mine management saw the value in implementing a complete B&D tooling package that included the Tire Handler Station. This specially designed tool is a must for handling tires where shop space is limited and at this site it has been improving safety, increasing truck utilization, reducing shop heating costs and reducing the mine's carbon footprint for the last three years. At only 15 feet deep and 20 feet wide this nimble but heavy-duty and reliable handler can be used between aisle-ways to keep bordering bays accessible for continued use. The B&D Tire Handler Station can remove, install and transport tires. Unlike a wheel loader, the Tire Handler Station includes a work deck that enables a technician to drive up to the tire and take the nuts off the studs. In addition, a balancer suspension system can be provided to carry the impact wrenches to remove the nuts. As an all-in-one work station this provides a safer and more efficient way to remove tires. **After 48 months truck utilization increased by 1376 hours.**

Tire removal required for:	Recommended frequency for maintenance**	Maintenance hrs without B&D THS	Maintenance hrs using B&D THS	Increased truck utilization (Frq x Hrs)
Front Tire change*	2,000 = 3 months***	4	2	2 x 16 = 32 hours
830E Wheel Motor	22,000 hrs = 33 months***	4	2	1.5 x 2 = 3 hours
830E Front Strut	14,000 hrs = 21 months***	4	2	2.5 x 2 = 5 hours
930E Wheel Motor	18,000 hrs = 27 months***	4	2	1.5 x 2 = 3 hours
930E Front Strut	10,000 hrs = 15 months***	4	2	2 x 3 = 6 hours

Every 48 months this mine site gained 1376 hours truck utilization based on applying the hourly savings to eighteen 830Es and fourteen 930Es.

*Back tire change frequency varies with site requirements and standards. The Tire Handler Station will increase truck utilization even more once this is taken into account.

**Standard hours recommended from OEM Rate Book.

***Based on trucks being used 657 hours per month (90% utilization).

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