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Case Study - Conveyor Belt Maintenance

Our client is a leading bauxite miner located in the south west of Western Australia. The bauxite ore is mined then transported to the refinery over 50km away by an overland conveyor belt, the longest of its type in the world.

The conveyor belt was built in the early 1980's, and contains more than 200km of wire rope (drive cable) and approximately 100km of rubber belt. The cables pass over 68,000 polyurethane pulleys. The belt follows the natural contours of the land, dipping into valleys and crossing rivers. A conveyor belt of this size with a throughput of 2700 tonnes of bauxite per hour requires a high level of servicing and maintenance. As the conveyor is operational 24/7, a team of service technicians is permanently deployed to maintain the conveyor in peak operating condition.

During operating hours the conveyor is patrolled by maintenance crews using specialised Corefleet 4WD vehicles. These vehicles travel over 60,000km per annum on average. For over 12 years Corefleet has supplied the "6 wheeler" to service the conveyor belt line. The "6 wheeler" is a specialised vehicle which was tailored to suit the client's specific needs on site. Modifications allow a crane to lift a stable raised platform over 3.3 metres service the conveyor belt. The platform has a SWL of 450kgs.

As well as the specialised modifications, the 4WD's are also fully compliant to Mine Safety Specifications including steel bull-bar, ABS, air bag, roll bar, air-conditioning, tow bar, amber beacon and overhead lights, cargo barrier, mesh to cab rail, communication radios, head light guards, rubber floor mats, lights on feature, illuminated flag, reverse buzzer, fire extinguisher and battery isolator.

With the demand and nature of the "6 wheeler" in mind Corefleet ensures that servicing is carried out with a minimum of downtime, usually fortnightly we arrange a trained mechanic to service the vehicles at the mine location which is approximately 200Km south of Perth. This requires a mobile maintenance station with a range of specialist tools and parts. Major work is completed in the workshop only when necessary.

This is only one example of how Corefleet works together with our clients to meet their specialised needs.

The technical specifications and modifications include:

Hydraulics & Crane

- Hydraulic overhead platform which raises with extendable/retractable safety rails.
- One tonne hydraulic lifting crane.

Platform & Loading Deck

- The platform deck has a maximum height of 3.3 metres
- Access steps left and right hand side
- Load deck fitted capable of 1500kg
- Light weight, anti-skid surface on platform.
- Food and equipment storage locker, located on the top of the load deck.

Vehicle

- Lazy axle conversion fitted.
- Parking brakes are fitted

to both sets of rear axles on disc brake

- Surface brakes fitted to the lazy axle.
- Tool and component storage area 1000 x 700mm including easy access fire extinguisher.
- Heavy duty bull bar, tow bar with pintle type hook.
- Bonnet is painted non reflective matt black
- A 20 L water reservoir is mounted beneath the front of the deck
- Reversing flood light installed
- Satellite tracking system.
- Dual batteries.
- Vacuum assisted trailer brakes.
- Communication radio.
- Differential locks where required.
- Wide tyres and rims.