Case Study:

BoomerHD 160 SERIES HEAVY DUTY ROCKBREAKER

Location:
Western Australia

Operation Type:
Iron ore (magnetite)

Equipment Solution:
BoomerHD 160 Series

Project Scope:

The client required a highly versatile Rockbreaker hydraulic boom system for an iron ore mine in the Mid West of Western Australia.

Working in a high vibration, dust laden atmosphere, with temperatures ranging from -5°C to 48°C, the boom system needed to handle this environment plus breaking rocks in the vertical position of the crusher throat with unconfined compressive rock strengths in excess of 360MPa.

Transmin's Solution:

The brief therefore, was for a BoomerHD 160 Series hydraulic boom system fitted with a 4 ton hydraulic hammer. The horizontal reach required was 17m, with a vertical depth of 10m and an operating angle of 280°.

Automatic lubricating system and the control panel mounted on the power pack were all requirements from the client.

To conclude the brief, the boom system would need to be powered via an independent 110kW hydraulic power pack and be tested under load for a minimum of 2 hours.

The drive of the slew mechanism was via two heavy duty hydraulic planetary gearboxes.

Transmin's standard design of cylinder rod-ends with full penetration butt welding and 100% ultrasonic testing were supplied. The cylinder rods have HVOF (High Velocity Oxygen Fuel) coatings on surfaces to provide wear characteristics far superior than chrome plating for mining conditions.

Transmin used custom designed boom and jib locking valves specifically to suit Transmin's inhouse designed cylinders. These bolt directly onto a machined port to allow the best possible safety that can be provided.

Hydraulic test points with quick connect couplings were fitted throughout the system at all critical areas, making testing and trouble-shooting very easy to perform without spillage.

The boom system also incorporates Transmin's proven "Taper Lock" style pin and bush locking system. The system was designed to enable the tapered caps at each end of the pin to provide rigid support, even though the pins may become worn. The taper lock system also allows easier maintenance and access to the pins.

To date the boom system is working better than expected - aiding plant productivity and reducing downtime.

Key Features:

- **Heavy Duty Design**

  Decades of testing and analysis has allowed Transmin to compare calculated loads with actual readings; continuously refining our internal design programs to deliver the most reliable boom systems on the market.

- **Boom & Jib Locking Kit**

  These ensure that the boom and jib do not collapse if a hydraulic line is severed.

- **Heavy Duty Slew - motion control**

  The unique slew motion control valve brings the rock breaker to a controlled stop when the slew control is released and delivers optimum torque through the drive train, improving wear rates and reliability.

- **Radio Remote Control**

  Allows precise movements whilst remote operating maximises user visibility and personal safety.

- **Taper Lock Bush Assembly**

  Ensures that the pins remain correctly aligned, whilst preventing any suffering from unforeseen bending loads.

- **Custom Boom Design**

  Transmin has the engineering capability to custom design booms to any requirements.

- **Custom Cylinder Design**

  Transmin cylinders are specifically designed and built using special rod coatings and full strength rod end attachments to provide superior strength and extended life under arduous conditions.

ISO 9001 QUALITY
ISO 45001 OHS
ISO 14001 ENVIRONMENT

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