

# CASE STUDY

## BALANCE MACHINERY LUFFING CYLINDERS REFURBISHMENT

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# PRESSURE DYNAMICS

### OVERVIEW

Pressure Dynamics was engaged to assess and refurbish a hydraulic boom luffing cylinder for a major global mining client. The asset had been in storage for approximately three years and required a detailed inspection to confirm its condition, compliance, and suitability for reinstallation. The project focused on identifying potential risks and delivering a reliable, fit-for-purpose refurbishment solution.

### APPROACH

The team conducted a comprehensive strip and inspection of the cylinder, including all associated manifolds, valves, and pipework. While the overall condition of the cylinder and external components was within acceptable tolerances, critical issues were identified within the pressure relief valves, including thread damage, seized components, and corrosion. Due to the risk of future leak paths and the critical nature of the equipment, Pressure Dynamics recommended full replacement of the manifold and associated components rather than repair. Following client approval, the team completed the refurbishment, incorporating a modified bolting arrangement to address previously undocumented changes to the cylinder. The assembly then underwent final testing to verify performance and compliance.

### OUTCOME

The project delivered a fully refurbished and recertified luffing cylinder, supported by test certification and ready for installation. The approach provided the client with confidence in the asset's reliability, reducing operational risk and ensuring compliance with required standards. This project demonstrates Pressure Dynamics' capability to manage complex hydraulic refurbishment projects, combining detailed inspection, engineering judgement, and practical solutions to deliver safe and reliable outcomes for critical mining equipment.



Image 1: Hydraulic Boom Luffing Cylinder



Image 2: Damaged Thread



Image 3: Valves

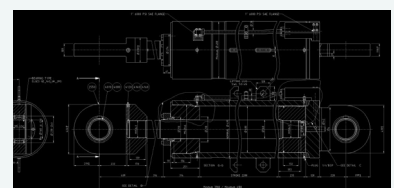


Image 4: Drawing of the Hydraulic Boom Luffing Cylinder