

CASE STUDY

WHEEL-LOCK HYDRAULIC MANIFOLD INVESTIGATION & TESTING PROGRAM

✉ sales@pressuredynamics.com

🌐 www.pressuredynamics.com



INTRODUCTION

Pressure Dynamics completed a detailed investigation and workshop testing program on a wheel-lock hydraulic manifold that had been taken out of service due to uncontrolled cylinder movement. The scope required a structured and methodical approach to diagnose the issue, identify root causes, and restore system reliability within a heavy-duty mining environment.

PROCESS

Uncontrolled cylinder movement presents significant operational and safety risks in mining systems. The affected wheel-lock hydraulic manifold had been removed from service, and the client required a thorough technical investigation to determine the underlying failure mechanisms. Accurate diagnosis was critical to ensure reliable recommissioning and to prevent recurrence in future operations.

Pressure Dynamics carried out a full disassembly and inspection of the hydraulic manifold, followed by targeted workshop testing to replicate operating conditions and assess component performance. Through systematic fault-finding, the team identified key failure mechanisms, assessed hydraulic integrity and component condition, validated performance under controlled testing condition and developed practical engineering recommendations

All findings were documented to provide clear, actionable guidance for improving system reliability.

OUTCOME

The investigation delivered clarity around the root cause of the uncontrolled movement and provided practical recommendations to strengthen system performance. This project highlights the capability within Team Karratha to deliver structured hydraulic investigations that improve safety, reduce unplanned downtime, and enhance reliability across heavy-duty mining infrastructure.

