

SAMPLE CUTTER TROLLEY UPGRADE

Custom Engineered Solutions

PROJECT SCOPE

Project:	Gold Mine, Western Australia
Material:	Gold Ore (crushed)
Equipment:	Belt Conveyor Sample Cutter Chute and Trolley
Capacity:	3500TPH Feed, 180TPH Cut
Scope:	Upgrade an Existing Sample Chute and Trolley
Aim:	To re-design the sample chute and trolley to increase strength and improve working life and serviceability.

Bulk Handling Technologies (BHT) was commissioned to re-design and manufacture a new sample cutter chute and trolley designed to extract product from the discharge of a high capacity belt conveyor. The original design suffered from high wear, regular blockages, excess flexure of the frame and erratic movement when actuated.

Designed initially for taking product samples, the sample chute cutter had been re-purposed to continuously cut material from the ore stream of the crushing circuit, where it was screened and used to build a fines stockpile to be reclaimed during crusher maintenance.

DESIGN CHALLENGES AND CONSIDERATIONS

Installed in an extremely abrasive environment, the biggest challenge was to re-design the chute to improve wear life and maintainability without an excessive increase in load on the existing structure.

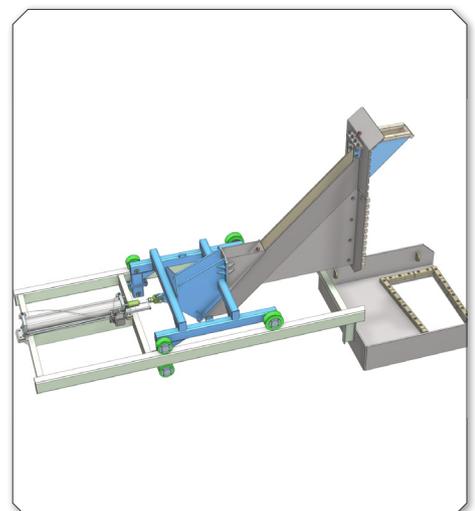
Additionally, the ore was very cohesive and would often build-up and block in the chute, requiring operator intervention to retract and manually clean. It was desirable to increase the chute width to reduce the risk of blockage, but without over-feeding the screen below.

To address the wear issues, additional wear blocks and liners had been installed by site to extend the time between replacements. However the additional weight was overloading the original trolley and wheels, with the actuator now unable to move the trolley smoothly for fine adjustment and accurate positing in the material stream.

THE FINAL SOLUTION

Designed and installed in a series of stages to meet the client's shutdown dates, the new sample cutter chute and trolley incorporated the following key features:

Chute Wear Liners:	Fully welded, polished Arcoplate chute module
Impact Plate Liners:	Chromium molybdenum, abrasion resistant, white iron casting on mild steel backing.
Wheel Bearings:	Upgrade bearings with grease purged labyrinth seal for additional protection.
Actuator:	Larger pneumatic actuator with position indication



For more information on this project, or any other enquiries, contact us + 61 (0)8 9332 3454 or sales@bhtgroup.com.au