

CONVEYOR HEAD CHUTE SPLITTER / DIVERTER Custom Engineered Solutions

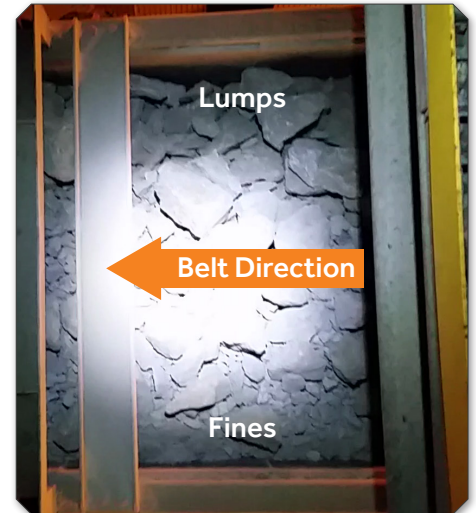
PROJECT SCOPE

Project:	Gold Mine, Western Australia
Material:	Crushed Gold Ore
Equipment:	Belt Conveyor Head Chute
Capacity:	3,000 TPH
Scope:	Design and supply of new head chute
Aim:	To reduce segregation and deliver a more uniform feed to the HPGR

As part of a wider review of hoppers and chutes aimed at improving material flow and increasing wear life, Bulk Handling Technologies (BHT) was commissioned to investigate the issue of segregation in the feed to a High-Pressure Grind Roller (HPGR).

Reducing segregation will result in a more uniform spread of particle sizes across the face of the HPGR rollers, which will maximise the roll pressure and increase grinding circuit throughput.

The photo to the right shows the bias of lumps towards the right-hand side of the HPGR belt feeder.

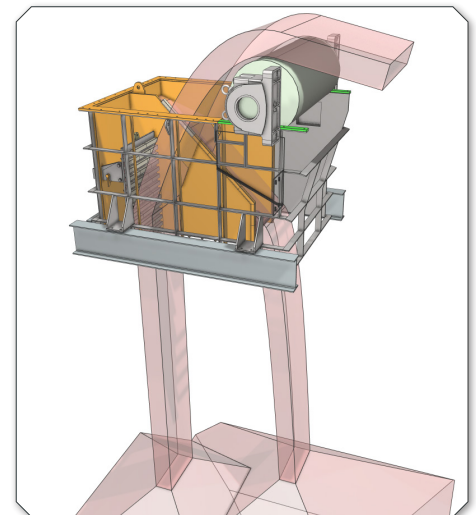


DESIGN CHALLENGES AND CONSIDERATIONS

The original design incorporated a standard head chute with a single stream discharge, creating a simple stockpile in the bin as it filled. With such a large variation in size from the smallest to the largest lump, this resulted in typical 'stockpile segregation' with the fines congregating towards the centre and the larger lumps rolling down the side of the stockpile.

As the material was drawn down by the belt feeder below, the lumps tended to be positioned to one side of HPGR feed belt.

The final solution had to fit within the same envelope of the existing head chute and also incorporate removable and replaceable wear components to reduce downtime during maintenance.



THE FINAL SOLUTION

The new head chute was designed to split the material stream and form two symmetrical stockpiles either side of the hopper centreline. This resulted in 're-mixing' during draw down and a more uniform spread across the HPGR rollers.

To allow fine-tuning of each trajectory, both sides were fitted with adjustable liner plates and rock box ledges.

The final design incorporated the following key features:

Wear Liners: Chromium molybdenum, abrasion resistant, white iron castings on mild steel backing.

Drop-in Box: Replaceable 'insertable' chute manufactured from Q&T plate.

The new head chute was manufactured in Perth and transported to site where it was installed and successfully commissioned.



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