

CASE STUDY

IMPROVING HP4 CONE CRUSHER PERFORMANCE

H-E PARTS INTERNATIONAL (H-E PARTS) SPECIALIZES IN PROVIDING WEAR MANAGEMENT SOLUTIONS. H-E PARTS LINER DEVELOPMENT PROGRAM HAS BEEN DEVELOPED TO OPTIMIZE LINER DESIGNS ON A SITE BY SITE BASIS AND INVOLVES THE ONGOING ANALYSIS OF SITE OPERATIONAL REQUIREMENTS, MACHINE OPERATING PARAMETERS, AND WORN LINER PROFILES.

Evolution Mining located in the Goldfields region of Western Australia, had a new processing plant experiencing excessive wear and insufficient liner life. The Mungari Mill processes ore from two of their mine sites and utilizes a Metso HP4 cone crusher in its secondary crushing operations. The wear was occurring on its OEM supplied liners, with each set only lasting 7 days before requiring change-out.

H-E Parts approached Evolution Mining and offered to provide a wear analysis and design a custom liner profile to suit site specific conditions, and subsequently increase liner life. H-E Parts engineers carefully analyzed the application before providing a customized design to ensure a consistent life and performance was achieved from each mantle. H-E Parts were confident that a 50% or 3-day improvement could be achieved.

H-E Parts first set of mantles were installed and lasted 14 days or a 100% life improvement over the original OEM supplied liners. H-E Parts design included a stepped profile to the internal face of the bowl, that allowed consistent ore throughput and ensured the crusher was choke fed, as well as improving material reduction. Mantle life is now more predictable, preventing unplanned shutdowns. Since H-E Parts improved the material selection and implemented a mantle redesign, the following has been projected:

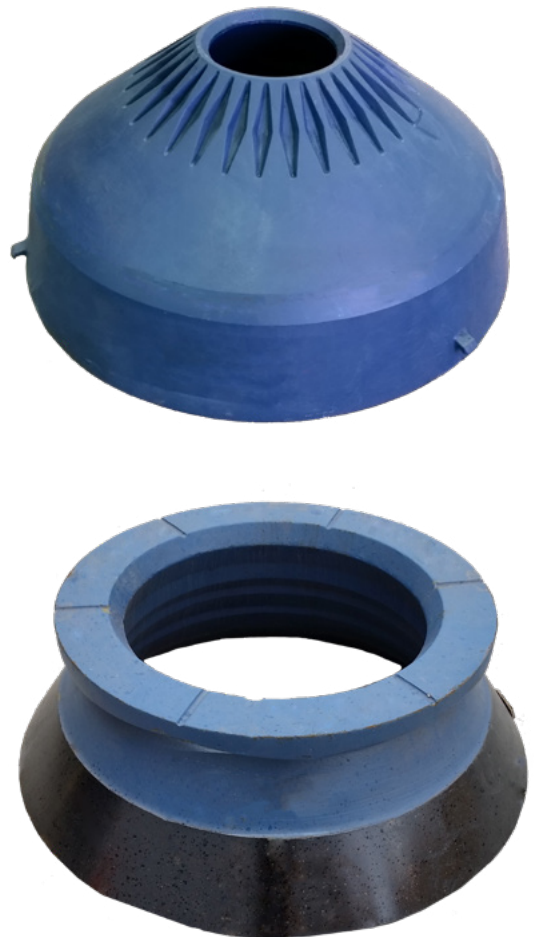
- Forecast reduced liner usage by 26 sets over a 12-month period, with a consistent 14-day life being achieved with each liner set.
- Estimated cost saving over previous supplier of roughly AU \$300,000 over a 1-year period on liner spend alone.

H-E Parts is now the preferred supplier at this site for the supply of crusher liners and has been awarded a 3-year supply contract.

H-E PARTS LINER PERFORMANCE TABLE

LINERS	PREVIOUS SUPPLIER	H-E PARTS MATERIAL
Mantle and bowl life (days)	7	14
Total usage over 1 year (forecast)	52	26

LOCATION	Evolution Mining
MINE TYPE	Gold Mine
APPLICATION	Metso HP4 Cone Crusher



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