

INNOVATION.
NOT DUPLICATION.™



CRUSHING SOLUTIONS

HP800 CRUSHER OPTIMIZATION

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.

TAILORED SOLUTIONS

The Rio Tinto operated Hope Downs iron ore mine located in the Pilbara region of Western Australia, Australia operates Metso HP800 crushers and was experiencing excessive wear and inconsistent life with their competitor supplied crusher liners, across all three cone crushers. Due to a change in maintenance scheduling the existing competitor liners were not capable of meeting the required life expectations, prompting site personnel to engage H-E Parts to assist.

H-E Parts had delivered life improvements in the past for Rio Tinto and was tasked with reporting on the current state of liner performance, presenting and trialling modifications that would prolong crusher liner life to coincide with the new maintenance schedule.

Another benefit of utilizing the CME™ liners was the capability to employ H-E Parts patented LockLift™ lifting device when liner change-outs are required. The LockLift™ safety lifter provides the safest means available to remove and replace crusher liners. This allows the liner to be lifted through the center hole of the mantle after the head nut is removed. All styles utilize a jacking arrangement to separate the head and mantle before lifting. This guarantees a fully controlled lift takes place, while ensuring the lifting gear is not overloaded by lifting the head along with the liner. By removing the need to weld on lifting lugs, H-E Parts can provide customers with a safe, cost effective solution that also reduces mantle change times.

CUSTOMER	Rio Tinto - Hope Downs
LOCATION	Western Australia, Australia
APPLICATION	Metso HP800 cone crushers
SERVICE	Bowl thread extension
PRODUCT	CME™ MnElite crusher liners

HP800 CRUSHER OPTIMIZATION

STAGE ONE TRIAL LINER

To allow benchmarking and further design improvements to occur, H-E Parts provided Hope Downs with a stage one trial liner that had an improved material composition. This had an immediate impact, improving liner life on the one crusher by 50% and the other two crushers by 112%.

PROPRIETARY MODELING

To assist the customer with further improving their liners and extending maintenance schedules, H-E Parts engineers performed an on-site evaluation of the existing stage 1 liners using innovative 3D laser scanning technology. The subsequent data was then evaluated in H-E Parts proprietary ChamberVision™ and CrusherVision™ software, enabling our engineers to predict liner shape through the full design life.

H-E Parts was able to identify several liner design improvements that could be incorporated into a stage two liner to ensure the following deliverables were achieved:

- Consistent liner life across all three crushers with complete material utilization
- Even liner wear throughout the length of the crushing chamber

SERVICE EXPERTISE

To accommodate the proposed stage two CME™ liners, the crushers required a bowl assembly with additional threads to ensure adequate thread engagement and vertical bowl travel could be achieved. Rather than purchasing a new bowl assembly from the OEM, H-E Parts service division was able to upgrade the existing component, providing a tailored, cost effective solution. H-E Parts also extended the adjustment cap to ensure the dust seal remained in place to maintain a tight seal.

STAGE TWO LINER

Once the bowl assembly modifications were complete, the stage two CME™ liners were supplied, run and rescanned. Not only did the newly supplied CME™ liners comfortably achieve 24 weeks as expected, the wear was uniform and the worn profiles analyzed and was found to still have an additional 33% worth of life remaining.



Worn OEM bowl



Upgraded bowl with thread extension

	COMPETITOR LINER LIFE (WKS)	H-E PARTS LINER LIFE (WKS) STAGE 1	H-E PARTS LINER LIFE (WKS) STAGE 2	CHANGE IN LINER LIFE (%)
HP800 (CS52)	~8	12	24	200%
HP800 (CS02)	~8	17	24	200%
HP800 (CS03)	~8	17	24	200%

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