

CASE STUDY

IMPROVING TC51 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 OPTIMISE LINER DESIGNS ON A SITE BY SITE BASIS AND INVOLVES THE ONGOING ANALYSIS OF SITE OPERATIONAL REQUIREMENTS, MACHINE OPERATING PARAMETERS AND WORN LINER PROFILES.

Western Areas Forrester Nickel Project (Western Areas) located in Western Australia, were experiencing excessive wear and insufficient liner life in their Trio TC51 secondary cone crusher. H-E Parts utilised their proprietary innovative 3D scanning technology to analyse the problem and offer a solution to improve liner life.

The data gathered showed that on the OEM supplied liners, wear was occurring unevenly and inconsistently across the bowl and mantle. As a result, the liners were limited to a life of just 34 days. H-E Parts suggested a staged approach to allow Western Areas to realise a greater total cost of ownership return.

STAGE ONE - MATERIAL CHANGE.

H-E Parts improved the liner life by upgrading the material used on the mantle from the OEM's 18% manganese crusher liners to H-E Parts CME™ MnElite™ manganese crusher liners. The CME™ MnElite™ range of manganese are hard wearing steels designed for high performance wear products. The material change on the TC51 cone crusher liners saw an increase in liner life from 34 days to 39 days.

STAGE TWO - PROFILE CHANGE

Following on from this first stage, H-E Parts advised Western Areas that development of a custom liner profile for their TC51 cone crusher liners would provide significant benefits. H-E Parts improved the profile by changing the crusher cavity shape to ensure utilisation of the remaining life of the mantle occurred. The profile change in stage two extended the liner life from 39 days to 64 days, which is an overall increase of 94% over the original supplied OEM liners.

Following on from the success of the liner development process, H-E Parts has been awarded various other supply and service opportunities at Western Areas, a testament to the continuous improvement and customer support offered.

LOCATION	Western Areas
MINE TYPE	Nickel
APPLICATION	Trio TC51 Cone Crusher
PRODUCT	CME™ Manganese Liners



	LINER LIFE (DAYS)	% IMPROVEMENT OVER OEM LINERS
OEM SUPPLIED LINERS	34	
CME™ STAGE 1 LINERS	39	18 %
CME™ STAGE 2 LINERS	64	94 %