FLEXCO

Partners in Productivity

Application Profile

Coal Mine Looks to Flexco MHCP Stainless Steel HD Cartridge Primary Cleaner To Cut Maintenance Costs

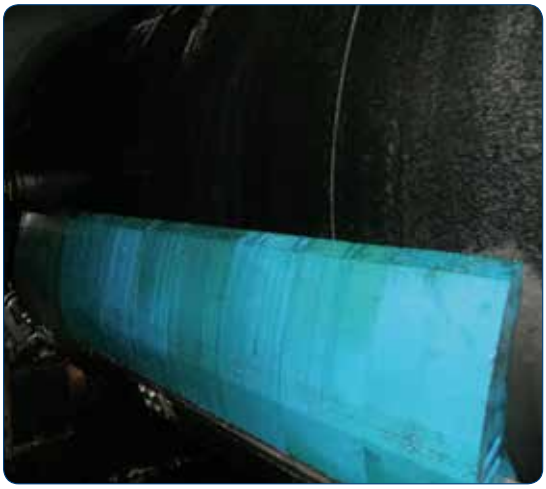
Industry
Coal Mining

Application
Underground longwall and open cut mining activities

Product
MHCP Stainless Steel Heavy-Duty Cartridge primary cleaner with FRAS-approved blades, combined with MHS Enhanced Service Advantage Cartridge secondary cleaner

Objective
Reduce carryback, decrease downtime, increase productivity

Conveyor Detail
- 5 x trunk conveyors ranging from 1600 to 1800 wide & generally 2 x development conveyors @1600 or 1800 wide
- PN2000/ 5ply FRAS belts with 4x4 covers
- Belt speeds ranging from 3.5 to 4.5 m/s
- Loads vary from 250 ton/hr up, with some conveyors having a Max Tonnage design of 4500 ton/hr



Problem:
At a heavy-duty coal mine located in central NSW, productivity and output was suffering from substantial carryback issues due to ineffective belt cleaning. The original primary cleaner, an H-Type® with polyurethane XF2 blade tips, had been working effectively for more than 10 years, but with increased tonnages and belt speeds, the cleaner blades required replacement every three weeks. Scheduled shutdowns were done on a four-week cycle, meaning carryback was accumulating as the cleaner blades wore out. This not only caused material waste, but a large amount of time spent on manual clean up. Site management determined that an urgent upgrade of their current primary cleaner was required to minimise downtime and reduce carryback, which would ultimately increase the mine's productivity and output.

Solution:

Site management discussed their problems with Flexco. It was suggested that the site upgrade their current cleaner to the recently-released MHCP Stainless Steel Heavy-Duty Cartridge primary cleaner. Engineered to handle the most abusive conditions, the primary cleaner was chosen because of its proven efficiency in aggressive and corrosive environments like those found in underground mines. The primary cleaner features a stainless steel design for greater corrosion resistance and FRAS-approved segmented SuperShear™ blades developed to withstand extreme conditions while maintaining a constant cleaning force and providing even wear. An 1800mm MHCP Stainless Steel Heavy-Duty Cartridge primary cleaner with FRAS-approved blades was fitted to the system. It was important that the location of the SuperShear blades was accurate and tip angles were positioned correctly to achieve optimum cleaning. With this in mind, the site chose to use an experienced Flexco distributor service team to carry out the installation. Regular visual inspections were conducted during the trial period.

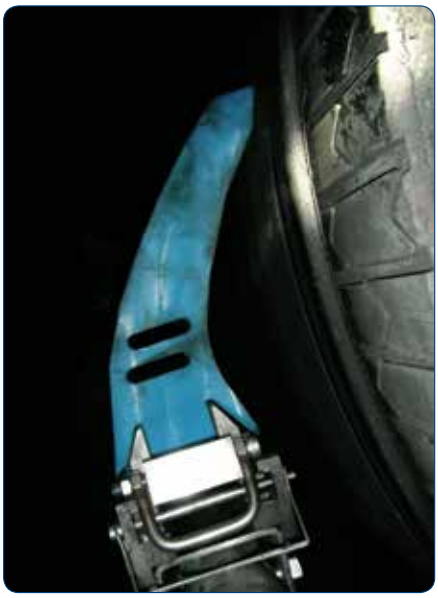


Fig. 1

Result:

Throughout the three-month trial, the MHCP Stainless Steel Heavy-Duty Cartridge primary cleaner offered extended blade life of from 3 weeks to up to 21 weeks and maintained a constant cleaning force without material carryback. The segmented SuperShear blades feature specially-designed force distributor vents that allow each blade to move independently from one another. Because of this, the blades maintain constant contact across the entire belt width, which solved the carryback issues the site was struggling with and reduced the amount of time spent on manual cleanup. The new primary cleaner also saved maintenance time and costs as the blade cartridges could be removed and replaced in minutes. Even with the high accumulation of fines over the extended life of the blade, they found that only a tap or two was all that was necessary to loosen the cartridge for removal. The cartridge was extracted easily by simply removing a pin, sliding the blade cartridge out through the side, and replacing it with a new or rebuilt blade cartridge, minimising downtime and using less operator time. The multiple features and benefits of the new primary cleaner solved the site's carryback issues, and increased overall productivity.

The MHCP Stainless Steel Heavy-Duty Cartridge primary cleaner with FRAS approved blades was fitted (fig-1), and inspected six months later (Fig-2). After discussions with the site, it was determined the blades would be changed out a month after that.

Fig. 2

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