



NOTHING PERFORMS BETTER

CASE STUDY LONGWALL MINING

PROBLEM

Longwall mining operations throughout the world use drag chains with connected flight bars to transfer the coal away from the cut face. The fast moving chains can extend over 2,000 feet with more than 1,000 connected flight bars. Each flight bar, weighing over 200 pounds, requires heavy duty locknuts that can withstand the harsh, abrasive, high-vibration environment. Failure to secure the flight bars causes significant damage and machine down time. Mining operations had to stop frequently to perform inspection and repair the bolted joint in extremely difficult conditions. Each time the operations came to a halt, whether to perform inspection or to repair a fastening failure, the cost of the down time often came at a rate of \$90,000 per hour. Since the advent of Longwall mining, dozens of fastening solutions have been used with limited success, and mostly disappointment. Most mine operators assumed that these were the best solutions available and learned to live with the frequent shutdowns.

SOLUTION

The longwall mining operations require chain and flight bar assemblies that can stand up to the abrasive, heavy load, high vibration environment found in the mining process. In an attempt to provide a better solution to their customer, Joy Global, a leading mining equipment manufacture, agreed to test the M30 Security Locknut in several mines over a 6 month time frame. The field tests proved the Security Locknut exceeded any other locknut in overall performance. The Security Locknuts stayed tight for several months of operation often saving the mining operators more than \$1,000,000 per year. Joy Global now installs M30 Security Locknuts on all original equipment installations and many mines throughout the world have followed suit.

BENEFITS

- Mining operations throughout the world have reduced their down time as a result of flight chain and bar bolted joint failure.
- Inspection costs have been reduced because maintenance intervals have increased due to equipment reliability.
- The durability of the Security Locknut allows it to be reliably applied with a standard, pneumatic or other power wrench tightening of the chain.



IMPROVE EQUIPMENT RELIABILITY, REDUCE MAINTENANCE, AND INCREASE SAFETY BY USING SECURITY LOCKNUTS.

Call (847) 970-4050 to choose the best fastening solution for your application.