



SHEREX FASTENING SOLUTIONS®

# CASE STUDY

## Benefits of Eliminating Wheel Loosening and Wheel-Offs

### **DISC-LOCK**®



### The Challenge

A leading provider of student transportation services was seeing significant loosening of its wheels with its Type A, B and C buses. In an extremely severe incident, a wheel-off had also occurred, leading to potential harm and lawsuit damages.

- All three bus types were using the OEM designed standard flange nuts with rotating washers.
- The flange nuts with rotating washers were having to be re-tightened too frequently for the bus provider, and there were safety concerns with the wheels.

### The Solution

The company reached out to Sherex for a solution to its wheel nut loosening problem. Through its line of Disc-Lock® wedge locking products, Sherex was able to offer their M14 Disc-Lock nut as a solution for this student transportation provider. The Disc-Lock Safety Wheel Nut is a wedge locking wheel nut that deters loosening when vibration occurs.

- Disc-Lock Wheel Nuts secure wheels by utilizing Wedge-Locking technology which relies on tension rather than friction.



- When exposed to axial loading, road shock or vibration, wheel nuts attempt to loosen. Movement in the loosening direction is forced between the cams of the Disc-Lock nut. Due to the fact that the cam angle is greater than the pitch angle of the thread, a wedge effect is created, preventing the Disc-Lock wheel nut from loosening.
- The hex nut and hex washer design allowed for easy assembly and disassembly of the locking nut and did not cause any damage to the base material as both components turn simultaneously with standard socket.

### The Savings

Over the course of 25 years there have been **zero** instances of wheels loosening and therefore saving OEM's and student bus providers in maintenance costs, expensive litigation from accidents, and potentially saving lives from dangerous wheel-offs.

**Cost savings: Invaluable!**



Sherex is a global manufacturer with a unique market approach in engineered fastening solutions that combines fasteners, tooling, and automation to deliver the best solution at the lowest total installed cost.

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