

PROBLEM SOLVER

Problem: Guard Rail Installation Puts Safety at Risk and Slows Turnout Maintenance

Turnouts are essential components of rail infrastructure, enabling trains to switch tracks and keeping freight and passenger operations flowing. Yet, one of the most overlooked challenges in turnout maintenance is the safe and efficient installation of guard rails—critical elements that guide wheel sets through flangeways and prevent damaging impacts at the frog point.

Installing guard rails in turnouts is a critical but hazardous task. Conventional fastening systems often require hammering e-clips into tight spaces beneath the guard bar, placing workers' hands dangerously close to potential impact zones. Mis-struck clips can spring loose, turning into projectiles and risking injury. This outdated method compromises both safety and efficiency, especially on the gauge side

where access is limited. The process is not only physically demanding but also slows down maintenance schedules, increasing track downtime and labor costs.

Solution: SafeGuard Enhances Safety and Speeds Up Turnout Maintenance

The **SafeGuard** system from voestalpine Railway Systems Nortrak offers a safer and more efficient alternative to traditional guard rail fastening methods. Designed to eliminate the hazards of conventional installation, SafeGuard replaces the problematic e-clip with a retention spring applied perpendicular to the rail base. This innovative configuration allows installers to work from outside the guard rail, keeping hands clear of confined spaces and reducing the risk of injury.

The spring is preset to the first of two notches on its rest. To achieve the required toe-load, a simple pry bar shifts the spring to the second notch—no hammering, no special tools, and no risk of fastener ejection. This intuitive mechanism streamlines the process, making installation faster, safer, and more consistent. Crews can complete turnout maintenance more quickly, reducing track possession time and freeing up resources for other critical tasks.

Engineered for durability, the system has undergone rigorous fatigue testing, withstanding over 40 million load

cycles without failure. Thousands of units are currently in service across Class I railroads, and SafeGuard meets full Buy America compliance standards, supporting domestic infrastructure goals while delivering high-performance reliability.

voestalpine Railway Systems Nortrak offers comprehensive, in-house design and manufacturing of 100% Buy America compliant railway systems solutions. The product portfolio includes special trackwork, switch machines, monitoring systems, premium rail, concrete ties, direct fixation fasteners, resilient clips, pads, and insulators. The SafeGuard guard rail fastener exemplifies Nortrak's commitment to delivering innovative solutions that meet the highest standards of safety, reliability, and performance, supporting railroads across North America in achieving safer and more efficient infrastructure.



RAILWAY
SYSTEMS
by voestalpine

Eric Gray
Engineering Manager, R&D Technology Trackwork
+1 205 380 4513