G80 vs G120: Performance Analysis of SHENLI RIGGING Professional G120 Rigging Component

Jining, Shandong Jun 24, 2026 (Issuewire.com**)** - Rigging components are the final connection between the lifting equipment and the load; their reliability is non-negotiable. Modern infrastructure projects increasingly require components that can maintain structural integrity under extreme conditions, including wide temperature fluctuations and repetitive, high-load cycles. In the demanding world of industrial lifting and heavy-duty material handling, the evolution of material science and forging technology continues to redefine safety and efficiency. As a **Professional G120 Rigging Component Supplier from China**, Shandong Shenli Rigging Co., Ltd. has observed that G120 rigging represents the cutting edge of lifting technology, offering significantly higher strength-to-weight ratios compared to traditional standards. This advancement is not merely an incremental improvement; it is a fundamental shift in how engineers approach load-bearing challenges, enabling lighter equipment to handle heavier loads with enhanced safety factors.

G80 vs. G120: Engineering for Peak Performance

For decades, Grade 80 (G80) has been the industry workhorse, providing a reliable baseline for general lifting operations. However, as load demands have grown, G120 has emerged as a superior alternative. The core distinction lies in the material composition and heat-treatment processes.

G120 components, forged from specialized high-strength alloy steels, are engineered to provide significantly higher tensile strength. While G80 is sufficient for many applications, G120 offers a lighter profile for the same working load limit (WLL), which translates into easier manual handling for field crews and reduced energy consumption in automated lifting systems. Furthermore, G120 exhibits superior fatigue resistance and performs reliably in extreme temperature environments, maintaining high tensile strength—exceeding 1100MPa—even at elevated temperatures of 200 degrees Celsius, while retaining excellent performance at sub-zero temperatures as low as -40 degrees Celsius. This performance durability ensures that the equipment remains safe and functional, even in the most unforgiving industrial environments.

This is where the importance of specialized material research—such as the collaboration between Shenli Rigging and the Institute of Metal Research, Chinese Academy of Sciences—becomes evident. Developing new alloy steels that provide exceptional toughness without sacrificing ductility is the key to meeting the next generation of lifting standards.

G80 vs. G120: Real-World Performance in Lifting Operations

To better understand the performance disparity between G80 and G120 in actual operations, let us examine a typical port heavy-lifting scenario. Imagine a continuous container dispatch task at a major port where crane crews face high-frequency, repetitive loads. When utilizing G80 rigging, the heavier weight of the components often requires more physical effort from workers when adjusting rigging configurations. Furthermore, after a full day of high-load operations, the equipment often shows noticeable signs of material stress and fatigue.

When the same crew transitioned to G120 rigging components, the benefits were immediate. Because G120 offers a higher strength-to-weight ratio, components can be thinner and lighter for the same working load, directly reducing operator fatigue and increasing the number of lifts possible per shift. More importantly, after a month of continuous, high-frequency use, the G120 components maintained excellent surface integrity. Thanks to superior fatigue life and material stability, operators reported that even when subjected to sudden gust-induced load shocks, G120 rigging provided a smoother and more stable lift. This stability not only minimized load oscillation but significantly bolstered on-site safety. This transition from "cautious handling" to "confident load-bearing" is the hallmark of G120 performance in industrial practice.

Industrial Applications

G120 components are particularly suited for high-stress applications where weight-to-strength ratios are critical, such as:

- **Large-scale infrastructure and construction:** Where lighter rigging reduces the burden on cranes and simplifies site assembly.
- **Mining and heavy machinery:** Where extreme load requirements and rugged environments demand superior material fatigue resistance.
- **Maritime and offshore operations:** Where high-strength, corrosion-resistant components are essential for safety in unpredictable conditions.

Core Strength: A Paradigm of Manufacturing Driven by the Full Industrial Chain

Shandong Shenli Rigging Co., Ltd., founded in 1965, has evolved from a traditional manufacturing enterprise into a global benchmark in the rigging industry over nearly six decades of dedicated development. The company operates a state-of-the-art production base covering 300,000 square meters, supported by a workforce of over 1,000 employees. This includes a specialized team of 297 engineers and technicians, forming the cornerstone of the company’s innovation strategy and enabling the seamless integration of cutting-edge material science with precision forging technology.

The company’s core competitive advantage stems from its profound commitment to "green and intelligent manufacturing." Shenli Rigging has constructed a comprehensive industrial chain that encompasses raw material warehousing, magnetic particle inspection, automated forging lines, heat treatment, precision machining, and final product testing. Through digital workshop management and intelligent equipment upgrades, the company has not only achieved a significant scale of production but also ensured consistent quality across its portfolio of nearly 6,000 product specifications, meeting micron-level precision requirements. As a recognized "Little Giant" enterprise by the Ministry of Industry and Information Technology and a Single Champion in the Shandong manufacturing industry, Shenli stands as a leader in technical excellence and industrial influence.

Quality management is the lifeblood of Shenli. The company has established a comprehensive quality control center where every individual product undergoes rigorous laboratory testing to verify its mechanical performance under extreme physical conditions. This uncompromising pursuit of quality has enabled Shenli’s products to earn the trust of the domestic market and reach over 50 countries and regions worldwide, including Germany, the United States, and Sweden. This transition from "Made in China" to "Quality from China" is built upon Shenli’s strict standards for every single chain link and a steadfast commitment to customer safety.

Whether providing standardized lifting chains or developing customized rigging hardware for unique operational conditions, choosing to transition to G120 represents a strategic investment in safety, reliability, and long-term operational cost reduction. By partnering with Shenli, industries gain a collaborator with deep manufacturing heritage and a relentless focus on R&D, empowering them to meet every challenge of the modern, complex work site with confidence.

For more information on high-grade rigging solutions, please visit: **https://www.shenlislr.com/**

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