



PRODUCT GUIDE

COIL SPRING **MANUFACTURING**



HEAVY HAUL FREIGHT RAILROADING DEMANDS THE WORLD'S MOST RELIABLE SPRINGS.



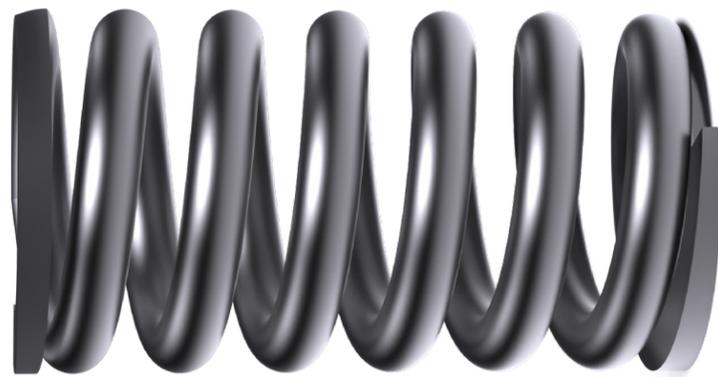
PIONEERS IN HEAVY HAUL PERFORMANCE

Amsted Rail has helped advance nearly every facet of heavy haul rail worldwide. Our unmatched experience includes over 100 years of manufacturing high-quality springs for railcars and locomotives. Today, we lead the world in the production of robust, dependable springs built to withstand the increasing demands of heavy haul rail operations.

GO WITH A LEADER TO ACHIEVE HIGHER RETURNS

The most productive heavy haul operators utilize the latest technology from Amsted Rail. With a reputation as solid as our spring components, it's no wonder nearly 3 million freight cars worldwide rely on us to roll with confidence.

When you partner with Amsted Rail, you gain access to the manufacturing expertise, accumulated knowledge and global resources of the largest railcar springs provider. Our springs have a proven record of unsurpassed performance in the harshest environments under the most extreme operating conditions.



SUPERIOR PROCESS. SUPERIOR PRODUCTIVITY.

Amsted Rail's innovative, cost-effective manufacturing process guarantees delivery of the highest quality springs in the shortest possible turnaround time. These advantages are significantly magnified when every railcar requires 50 to 60 springs to provide superior ride performance under today's burgeoning axle loads.

THE WORLD'S LOWEST COST AND HIGHEST ROI SPRING MANUFACTURING FACILITY

- ▶ Fully automated with twice the throughput of traditional manufacturing lines
- ▶ One-piece flow for continuous processing
- ▶ Only 2 ½ hours from raw steel to finished spring
- ▶ Capacity up to 500 springs per hour
- ▶ Automation improves workplace safety
- ▶ Uses 62% less energy than traditional spring manufacturing processes
- ▶ Requires a fraction of the square footage of traditional manufacturing lines

PROVIDES MANUFACTURING FLEXIBILITY

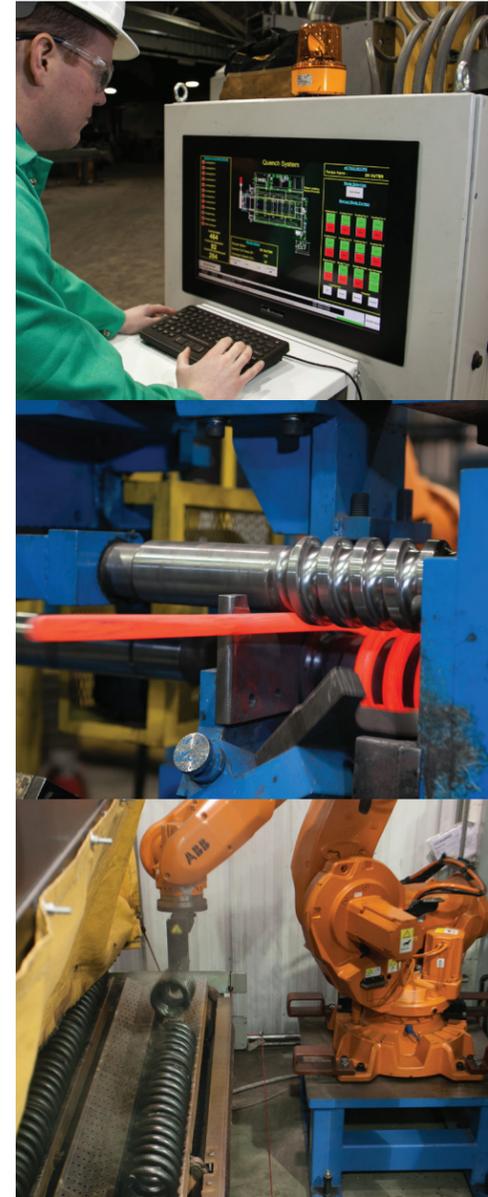
- ▶ Able to produce different size springs on the same line
- ▶ Quick change set up for fast and easy calibration of automated equipment
- ▶ More responsive to the time-sensitive demands of heavy haul rail market
- ▶ Minimizes costly, unplanned downtime

ROBOTIC TAPERING FOR SUPERIOR AND CONSISTENT QUALITY

- ▶ Maintains ultra-tight tolerances at full line velocity
- ▶ Ensures precise alignment of tapered ends

ROBUST QUALITY CONTROL STANDARDS

- ▶ Automation helps eliminate human variability
- ▶ 10 quality control checkpoints are enforced throughout the manufacturing process
- ▶ Real-time, online tracking monitors entire manufacturing line
- ▶ Data analysis is utilized to determine the most advantageous time for line maintenance



AMSTED RAIL, THE GLOBAL LEADER IN FULLY INTEGRATED FREIGHT CAR SYSTEMS FOR THE HEAVY HAUL RAIL MARKET.

Amsted Rail is the world's leading provider of undercarriage and end-of-car railcar components, with facilities spanning six continents. Through our state-of-the-art manufacturing processes, Amsted Rail has been redefining industry standards for innovation and technology since 1877, providing our customers worldwide with unmatched performance and reliability for the long haul.

To learn more, visit www.amstedrail.com.

