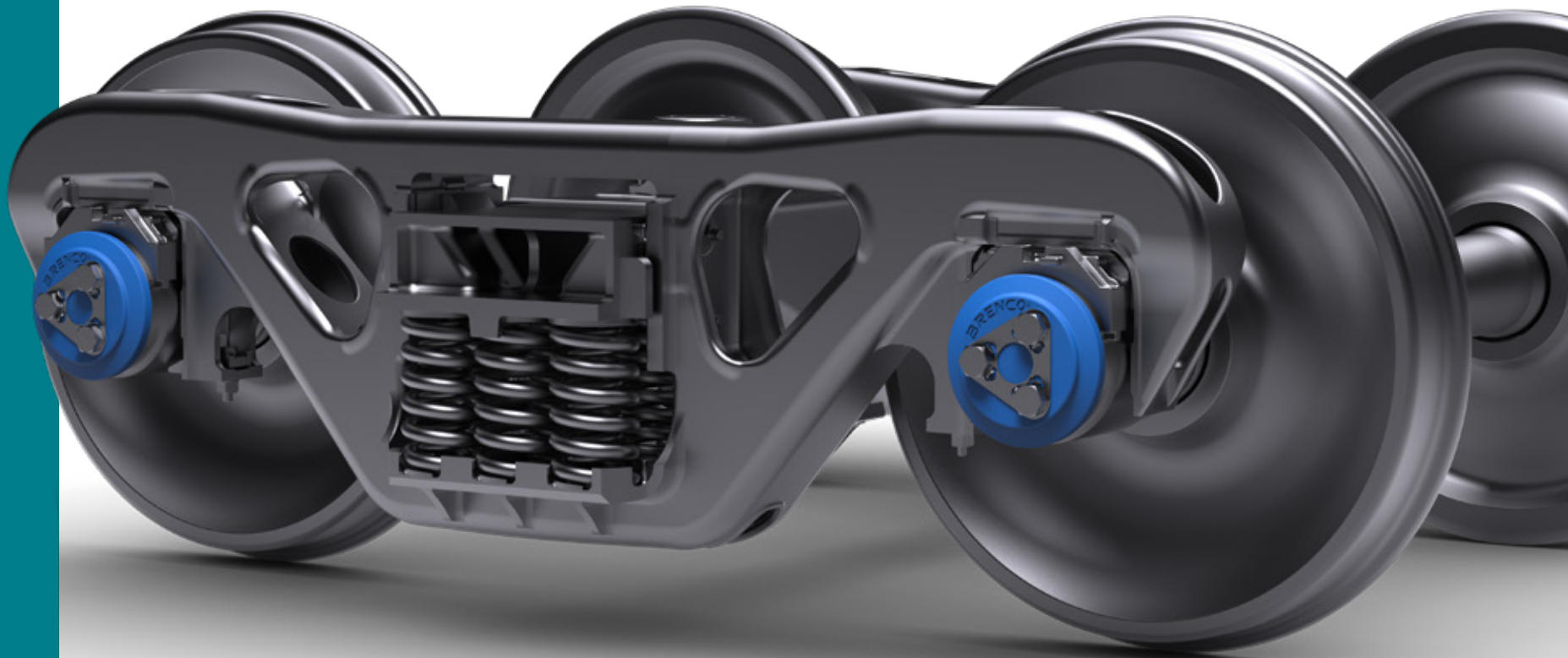


FREIGHT

# PERFORMANCE-DRIVEN SOLUTIONS FOR THE HEAVY HAUL WORLD



BUILT FOR THE TOUGHEST ENVIRONMENTS AROUND THE WORLD

***Amsted Rail***<sup>®</sup>

# LEADING THE WAY IN FULLY INTEGRATED FREIGHT CAR SYSTEMS

At Amsted Rail, our mission is simple: to deliver dynamic, innovative and reliable solutions that shape the future of heavy haul rail. We are relentless in our pursuit of new product advances, new engineering technologies and new manufacturing processes to bring you one step closer to optimized performance.



## **ENGINEERING EXCELLENCE ACROSS OUR ENTIRE PRODUCT LINE**

Amsted Rail builds virtually everything under the railcar—from wheels, axles and bearings to brake systems, end-of-car energy management systems and more. In many categories, we are the industry leader; in every category, we set the standard for proven performance and reliability.

Our manufacturing processes are meticulous, crafting products to withstand the unforgiving challenges of the harsh, real-world environments heavy haul railcars face each day. Each product is precision-engineered, built to the tightest tolerances and subjected to rigorous testing, guaranteeing optimized durability and exceptional performance.

## **REVOLUTIONIZING THE FUTURE OF FREIGHT RAIL FLEET MANAGEMENT**

Amsted Digital Solutions Inc® offers telematics and software services that alleviate the burdens of freight rail fleet management for shippers and asset owners alike. By combining Amsted Rail's real-world freight railway experience with a dedicated team of software developers, telematics experts, user experience designers and data scientists, we help fleets increase utilization and minimize downtime.

## **GLOBAL REACH, 24/7 RESPONSIVENESS**

No matter where in the heavy haul rail world you are, Amsted Rail is ready to respond 24/7. Across six continents, in every significant railroad market, our support team will hit the ground running to get you the parts, systems and solutions you need fast.

**LET'S WORK TOGETHER TO KEEP YOUR BUSINESS ON TRACK.  
CONTACT US TODAY AT +1.800.621.8442 OR VISIT US AT [WWW.AMSTEDRAIL.COM](http://WWW.AMSTEDRAIL.COM).**

# HIGH-RELIABILITY BOGIE SYSTEMS THAT GO THE DISTANCE

Around the globe, Amsted Rail bogies consistently exceed the million-mile barrier, even in the demanding and ever-changing operating environment of heavy haul rail transportation. Each precision-engineered component is calibrated to complement the others, working in sync to achieve a level of reliability and performance that is unique in the industry. Track-friendly bogie models for specific applications are available for track gauges ranging from 914 mm to 1676 mm and railcar axle loads up to 45 metric tonnes.

## MOTION CONTROL® BOGIE

Delivering maximum payload and increased service life



- ▶ Most versatile variable damped bogie for all asset types
- ▶ Lightest and most commonly specified M-976 bogie system available
- ▶ Lowest lifecycle maintenance costs
- ▶ Adapter Plus® steering pad provides improved wheel and bearing service life
- ▶ Longer friction wedge life
- ▶ First bogie to achieve unconditional AAR M-976 approval
- ▶ Optimal for 286,000-pound gross rail load/32.5 tonne axle load

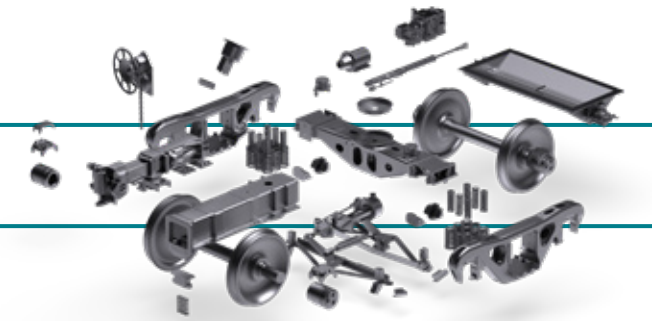
## TRAKMASTER® BOGIE

Next-generation performance tailor-made for high mileage and heavy axle load



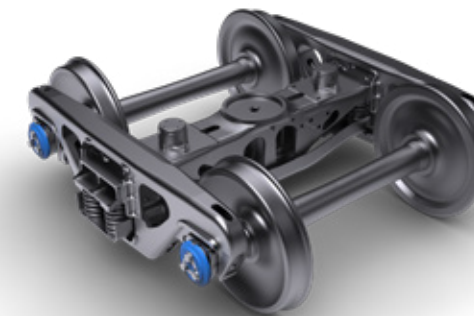
- ▶ First bogie to pass the latest AAR M-976 criteria with updated track profiles
- ▶ Better curving performance to reduce wheel flange wear
- ▶ Longer wheel life and bogie component life
- ▶ Re-engineered dual rate suspension
- ▶ Lower maintenance costs

ENHANCE PERFORMANCE AT EVERY TURN WITH AMSTED RAIL'S CATALOG OF FREIGHT COMPONENTS



## SWING MOTION® BOGIE

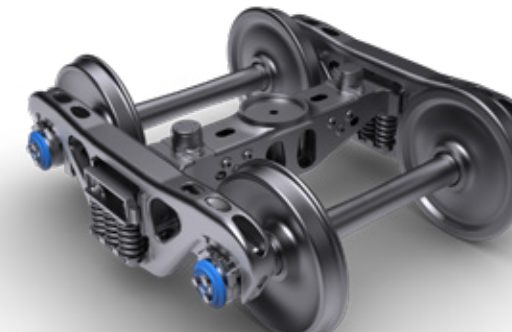
Premier suspension design for safety and stability at high speeds



- ▶ The ultimate in freight rail bogie performance for lading protection
- ▶ Proprietary Swing Motion stabilization system unsurpassed in high-speed stability
- ▶ Reduced wheel and component wear
- ▶ Ideal for automobile and finished goods transport
- ▶ Up to 286,000-pound gross rail load/32.5 tonne axle load

## SUPER SERVICE RIDE CONTROL® BOGIE

Reduces wear and keeps the bogie square



- ▶ Wide-winged friction wedge
- ▶ Provides good stability
- ▶ Keeps bogie square as components wear
- ▶ Up to 286,000-pound gross rail load/32.5 tonne axle load

# COMPREHENSIVE FREIGHT CAR COMPONENTS

Amsted Rail develops solutions that begin with the “Core Component Interaction,” where each key component is engineered to seamlessly interact within the system, ensuring high-performance bogies, durable end-of-car systems and reliable brakes. Backed by rigorous testing and engineering expertise, our integrated systems and components are designed to work together to lower maintenance costs, minimize downtime and extend the service life of your railcars.

## END-OF-CAR ENDURANCE 325™ DRAFT GEAR

- ▶ Offers protection, performance and durability in one lightweight package
- ▶ Utilizes the AAR standard yoke and follower
- ▶ Optimized housing design for lower stresses and longer life
- ▶ AAR M-901E unconditionally approved



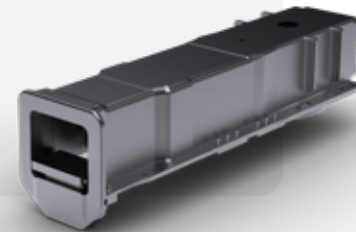
## END-OF-CAR TWIN PACK® DRAFT GEAR

- ▶ Proven protection worldwide
- ▶ Designed to reduce impact force by as much as 65%, limiting the potential for railcar damage
- ▶ Available for all coupler types
- ▶ AAR unconditionally approved



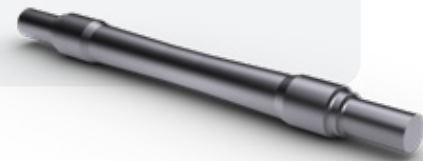
## END-OF-CAR INTEGRAL CAST DRAFT SILLS

- ▶ Built to be lighter, stronger and longer-lasting than fabricated sills
- ▶ Reduce empty car weight by nearly 300 pounds
- ▶ Lower impact stresses in the railcar structure
- ▶ AAR approved



## AXLES

Complete line of axles manufactured to the highest standards for precision, consistency, quality and reliability.



## COIL SPRINGS

Excellent process control ensures consistency of dimensional, metallurgical and functional properties.



## TAPERED ROLLER BEARINGS

Designed specifically to provide dependable and reliable service in demanding freight environments.



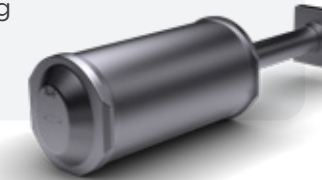
## END-OF-CAR CUSHIONING DEVICES

- ▶ Designed with both yard impacts and train force reduction in mind
- ▶ AAR unconditionally approved



## END-OF-CAR ACTIVE DRAFT CUSHIONING DEVICES

- ▶ Designed to maintain a neutral position at all times, ready to attenuate in-train draft shocks
- ▶ Provides optimal protection against both buff and draft forces that can cause damaging stresses



## END-OF-CAR COUPLERS AND YOKES

- ▶ Fatigue-resistant couplers built to AAR and MCSCM standards
- ▶ High-performance yokes, knuckles, drawbars and articulated connectors for any application



## WHEELS

- ▶ The most comprehensive wheel product line in the industry
- ▶ 72% longer wheel life when tested under rugged, real-world heavy haul conditions



## PLASTIC PELLET GATE

- ▶ Innovative design exceeds rigorous EPA regulations
- ▶ Lightweight, low-profile design allows for higher pellet load volume and more profitable operation



## PRELOAD PLUS® CONSTANT CONTACT SIDE BEARING

- ▶ Uses steel spring technology for constant performance throughout the life of the side bearing, allowing it last over 1 million miles
- ▶ Improves the ride quality, curve negotiation and overall stability of railcars even at high speeds, saving fuel and wear



# BRAKE SYSTEMS SOLUTIONS WITH STOPPING POWER

Amsted Rail offers the broadest array of advanced braking equipment. Each component is designed to meet the exacting tolerances demanded by the rigors of heavy hauling. The acquisition of service-proven Ellcon National further enhanced Amsted Rail's portfolio of brake products that deliver exceptional performance and reliability.

## EMPTY-LOAD DEVICES

- ▶ Available for all freight car types
- ▶ Senses whether the car is loaded or empty and proportions brake-cylinder pressure accordingly



## SLACK ADJUSTER

- ▶ Conventional and truck-mounted automatic slack adjusters available
- ▶ Maintains constant piston travel, minimizing loss in brake shoe force due to shoe and wheel wear



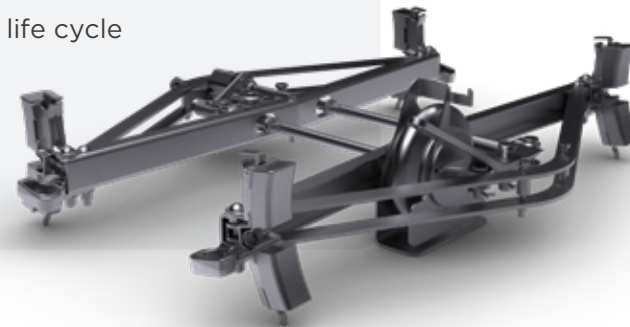
## TRUCK MOUNTED BRAKE SYSTEM

- ▶ Bolster mounting limits vibrations throughout system
- ▶ Fits standard AAR bolsters and employs standard brake beams and cylinders, allowing for efficient assembly and versatile retrofit to existing railcars



## IBEX® TRUCK MOUNTED BRAKE SYSTEM

- ▶ Lighter design than body-mounted brake systems and other truck-mounted brake systems
- ▶ Maximum shoe to wheel alignment and weight balance
- ▶ Versatile modular design for longer life cycle



AMSTED RAIL ALSO OFFERS THE INDUSTRY'S MOST RUGGED LOCOMOTIVE COMPONENTS, DESIGNED TO TAKE ON THE HEAVIEST LOADS UNDER THE MOST EXTREME CONDITIONS. FROM WHEELS AND AXLES TO BEARINGS, COILS AND GEARS, WE MANUFACTURE TO EACH CUSTOMER'S SPECIFICATIONS, ENSURING PERFORMANCE THAT'S OUT IN FRONT.



## HAND BRAKES

- ▶ World's widest product line of AAR-approved hand brakes
- ▶ Freight car vertical wheel brakes for any type of freight car
- ▶ Plain bearings eliminate seal failure



## ABU BODY MOUNTED BRAKES

- ▶ Lightweight with fabricated construction
- ▶ Provide a 12-inch stroke and is corrosion resistant for optimum performance



## TANK CAR BALL VALVE

- ▶ Full port designed for maximum flow
- ▶ Bolted cap-to-body design simplifies repairs
- ▶ Stainless steel construction eliminates corrosion
- ▶ Lowers the overall profile inside the housing cover



## ADAPTER PLUS STEERING PAD SYSTEM

- ▶ Patented elastomer pedestal pad-liner-bearing adapter design improves axle-to-rail wheelset alignment
- ▶ Improves roller bearing life with reduced lateral forces and vertical impacts
- ▶ Enhances curving and rolling resistance and reduces wear on the side frame pedestal roof, thrust lug, bearing adapter crown and the bearing adapter thrust lug area



# AMSTED DIGITAL SOLUTIONS: ADVANCING FLEET VISIBILITY AND PRODUCTIVITY












Amsted Digital Solutions® brings the complex ecosystem of freight rail logistics—typically managed in spreadsheets and multiple third-party systems—into one user-friendly platform.

## SUPPLY CHAIN VISIBILITY SOFTWARE

Our proprietary Supply Chain Visibility™ (SCV) software features a comprehensive suite of fleet management tools enhanced with real-time data insights from our innovative onboard technology, equipping your team with the data needed to excel at their jobs, no matter the department or function.



## COMPREHENSIVE SOLUTIONS

 <b>Automated Bills of Lading</b>	 <b>Shipment Management</b>	 <b>Asset Management</b>	 <b>Yard Management</b>	 <b>Electronic Document Management</b>
 <b>Customized Analytics &amp; Reporting</b>	 <b>Online Railcar Inspection Sheets</b>	 <b>Track &amp; Trace Monitoring</b>	 <b>Trip Management &amp; Optimization</b>	

## THE IQ SERIES GATEWAY: REVOLUTIONIZING RAIL OPERATIONS WITH ACTIONABLE INSIGHTS

The IQ Series™ gateway is a cost-effective, solar-powered device for rail shippers, asset owners and maintenance-responsible parties that offers actionable insights to reduce costs and optimize operating efficiency without additional sensors.

Mounted on the body of a railcar, a single IQ Series device provides accurate Load Status in Motion (LSiM) for precise mileage calculations, dynamic ETA calculations, geofence alerts, impact detection, and more. It can also be mounted on bogie bolsters and configured with Bogie IQ® technology for real-time condition monitoring of wheelsets and brake systems.



## OPTIONAL PROFESSIONAL FLEET MANAGEMENT SERVICES

We understand how demanding managing rail operations can be, especially when you're responsible for other mission-critical tasks. That's why our team of highly skilled fleet management professionals is here to handle the heavy lifting for you. With our professional services, you can entrust us with some or all of your needs, while you concentrate on other aspects of your business.

→ [LEARN MORE AND SCHEDULE A DEMO TODAY AT AMSTEDDIGITAL.COM](https://amsteddigital.com)

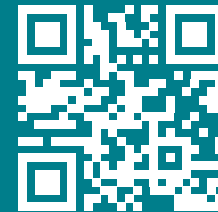


## ABOUT AMSTED RAIL

Amsted Rail is a leading global 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 customers worldwide with unmatched performance and reliability for the long haul.

Amsted Rail is part of the Amsted Industries family of companies. Amsted is a diversified global manufacturer of highly engineered industrial components serving primarily the rail, automotive, commercial vehicle and building & construction markets. A leader in each of the market segments it serves, Amsted Industries is privately held and employee-owned, giving employees a shared interest in its present and future successes.

SCAN TO  
LEARN MORE



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