



PENN MACHINE COMPANY LLC

Setting the Standard for Excellence in OEM & Aftermarket Wheels, Gears & More

TRANSIT • RAIL • MINING • OIL AND GAS



www.pennmach.com

Penn Machine Company LLC (PMC) is a member of Marmon Holdings, an international association of more than 150 companies that operate independently within these diverse business sectors:

- Building Wire
- Construction Services
- Distribution Services
- Engineered Wire & Cable
- Flow Products
- Highway Technologies
- Industrial Products
- Oil and Gas
- Retail Store Fixtures
- Transportation Services & Engineered Products
- Water Treatment

Marmon Holdings companies operate about 300 manufacturing, distribution and service facilities worldwide and employ more than 17,000 people.

Marmon Holdings is headquartered in Chicago. Brothers Jay and Robert Pritzker founded the company in 1953. In 2008, Berkshire Hathaway acquired a majority interest in Marmon.



A Marmon/Berkshire Hathaway Company

TRANSIT

A Leader in Resilient & Solid Wheels, Axles & Gearboxes for Transit Applications

Penn Machine's Transit Division manufactures a wide selection of resilient and solid wheels, wheelsets, standard and low-floor axles in solid and hollow designs, and remanufactured or requalified gearboxes for light rail and metro systems throughout North America.

By using ultrasonic and magnetic particle testing, and conducting computerized dimensional checks, we ensure superior quality wheels and axles required for all track conditions.

Key features and benefits of resilient wheels are:

- Reduced Noise & Vibration
- Less Tire & Track Wear
- Lower Maintenance Costs
- Longer Operating Life
- Improved Ride Quality

Our operations meet the highest quality standards, and our commitment to excellence is verified by the ISO and AAR certifications we have earned.



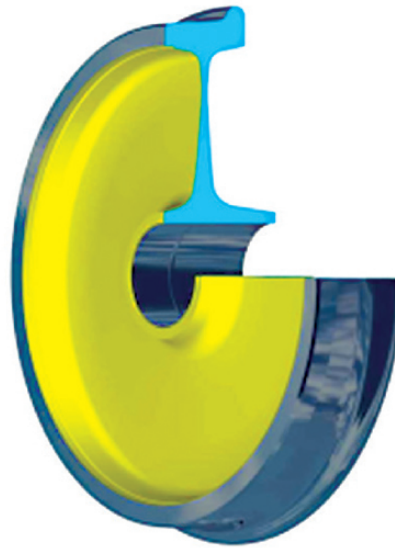
Stay On-Track with Resilient & Solid Wheels

Our resilient wheels are industry preferred for outstanding noise and vibration damping properties, reduced unsprung mass, improved ride quality and track wear minimization. We achieve these features and benefits by precisely controlling the elasticity of the rubber blocks.

The divided wheel body facilitates refitting of the wheel tire, which can be performed under the vehicle in a variety of situations, saving substantial time and maintenance costs. At the end of the lifecycle, only the tire and rubber blocks need to be replaced.

Our solid wheels are made of forged steel and come in a variety of models, including stressed balanced, straight plate and "S" plate solutions. Our lighter-weight wheels meet the highest AAR and APTA standards, and can be customized to the specifications for any OEM or aftermarket application.

We also design solid wheels to accept noise dampers, substantially reducing noise and vibration.





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TRANSIT

Standard & Low-Floor Axles for Inboard & Outboard Designs

We manufacture rail transit axles to customer specification using AAR-approved methods for non-destructive testing (NDT) and dimensional checks. By performing subcritical quenching in our facilities, we ensure that every Penn Transit axle meets AAR or UIC standards.

To complement our production capabilities, we also re-condition axles and supply flexible couplings, replacement gears and rubber components for gears, as well as gearboxes and related products. Additionally, we offer a full range of hubs.



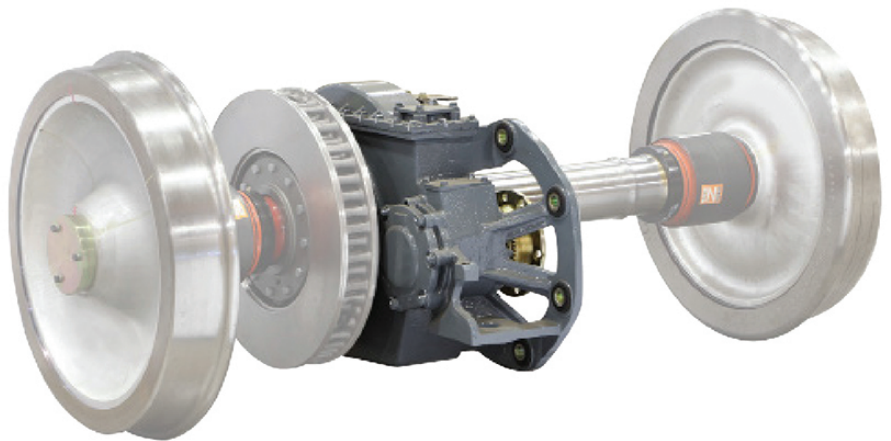
The Preferred Source for Re-Built Gearboxes

We custom-manufacture and service a wide range of transit gearboxes that meet the most current ISO and AAR standards.

We are a leading supplier of gearboxes to the rail transit industry because of our:

- Quality
- Leadtime
- Experience

Our breadth and depth of experience repairing single and double-reduction propulsion units, right angle drives and other types of propulsion equipment quickly and accurately help the transit authorities we service keep their rail vehicles running on time.



RAIL

A Leader in OEM & Aftermarket Locomotive Gearing

Our Locomotive division manufactures a full range of gears, pinions and armature shafts for freight and commuter rail applications worldwide. With more than 100 employees and more than 200,000 square feet of manufacturing space at facilities in Johnstown, PA, and Blairsville, PA, we meet or exceed OEM specifications.

Our production capabilities are complemented by these value-added services:

- In-House Heat Treating
- Gear Re-Profiling
- Custom Stocking Programs
- Quick Turnaround

Traction (Bull) Gears

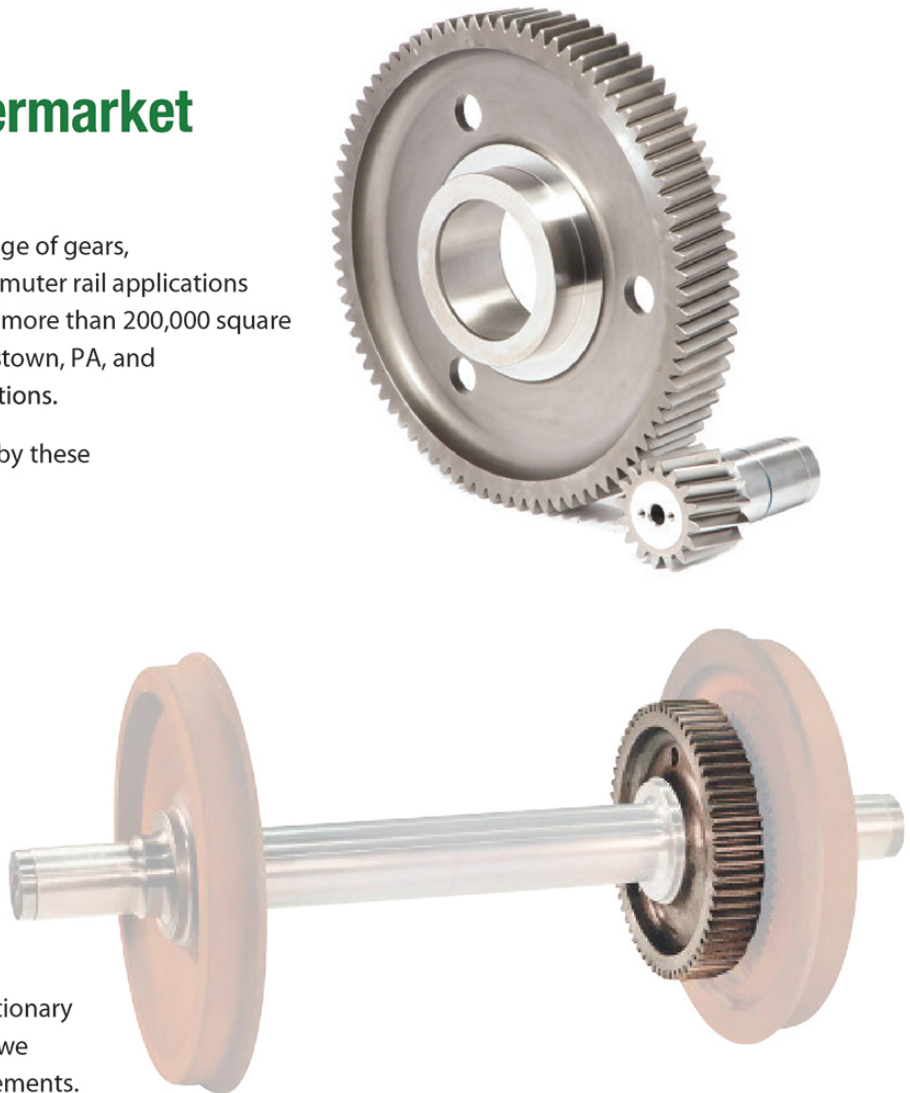
As a major supplier of traction gearing, we manufacture a full range of replacement locomotive traction gears for leading OEMs around the world.

Our Super Gear™ products are recognized as the industry standard. In addition, our revolutionary manufacturing process ensures that every gear we produce meets the highest performance requirements. Penn Locomotive gears are manufactured from alloy steel and are carburized and hardened to provide exceptional wear properties. We finish-grind all gears to an AGMA minimum quality level of 10.

Key advantages of our traction gears include:

- Up to 60% longer wear life
- Extended time between re-profiling
- Reduced vibration due to involute wear
- Lower operating costs

All Penn Locomotive products are warrantied.





PENN MACHINE COMPANY LLC

RAIL

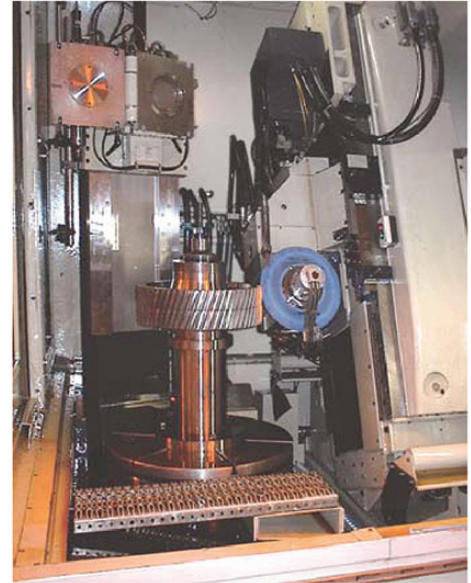
We manufacture a full range of locomotive traction gearing for railroads worldwide. We specialize in new bull gears, traction motor pinions, armature shafts and engine gears. Additionally, we offer bull gear re-profiling and re-qualifying services to extend gear life by bringing the involute tooth form back to the original profile.

Super Gear

The Super Gear™ is the industry's only gear with a five-year limited wear warranty. The triple alloy Super Gear is carburized and hardened in our heat treat facility. Gears are further machined on our CNC dual spindle turning center for accuracy and finish-ground on our advanced CNC gear grinders. This process has become the industry standard because it yields exceptional wear properties by offering more consistent hardness in the effective depth compared to induction and flame hardening.

The combination of a superior metallurgical alloy and in-house processing results in Super Gear having these advantages over other products:

- Up to 60% Longer Wear Life
- Extended Service Life
- Reduced Traction Motor Vibration Due to Premature Involute Wear
- High Tooth Surface Hardness
- Exclusive 5-Year Limited Warranty



Traction Motor Pinions & Sub-Components

Our American-Made products include:

- Integral Pinion Shafts
- Stub Shafts
- Armature Shafts

They are ideal for AC and DC applications, meet or exceed OEM standards and come with an exclusive 18-month warranty.



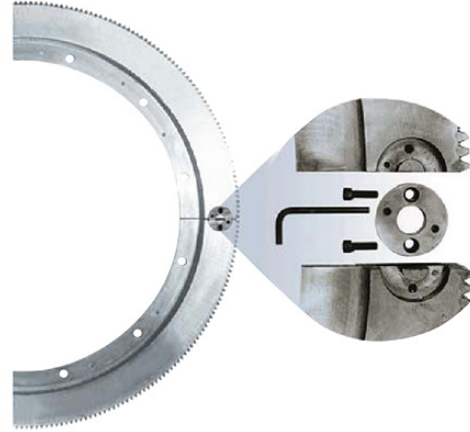
Engine Gears

We manufacture a variety of quality locomotive engine gears that meet the same high standards to which we hold all of our products.

Segmented Starter Gear

Our 3-piece design starter gear was developed in cooperation with a major Class I railroad. The benefits of this new product have enabled railroads and repair shops to improve their profitability by:

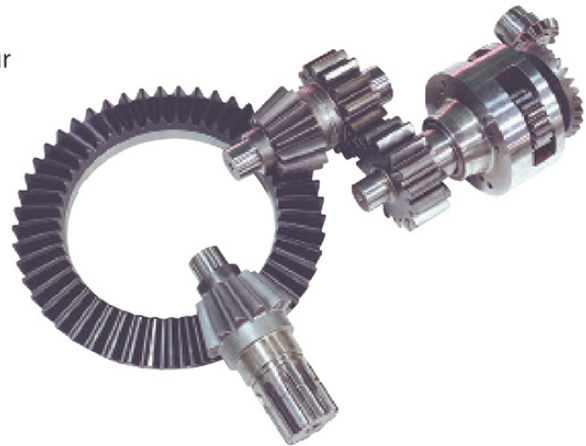
- Extending Wear Life
- Minimizing Change-Out Time
- Reducing Labor Costs (estimated 80 hours saved)
- Reducing Locomotive Downtime



In-House Heat Treat

To improve metallurgical structure and relieve internal stress, we heat treat our products in-house according to specifications. Our extensive array of heat treating equipment can accept parts up to 72" in diameter that weigh up to 6,000 lbs. Our gas-fired atmospheric furnaces are computer controlled to ensure the consistency of the carbon content and case depth in our carburized gearing. By performing all of the heat treating ourselves, our customers benefit from:

- Unsurpassed Quality Control
- Reliable On-time Deliveries
- Reduced Lead Times
- Cost Savings



MINING/OIL AND GAS

Gears & Gearboxes for Mining, Metals, Construction & Fracking

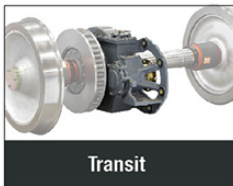
For nearly a century, Penn Machine Company and its predecessors have provided customers in mining and manufacturing with OEM and aftermarket gearing and gearboxes. Our loose gears are available in Helical, Spur, Worm, Bevel and Shaped varieties, and meet AGMA 12 standards. Additionally, we manufacture and service all types of gearboxes, including those used on:

- Cooling Tower Drives
- Conveyors
- Power End Gearing
- Pulverizers
- Wastewater Treatment Systems
- Underground Mining



THE LEADER IN WHEEL SET SOLUTIONS

In 1920, **Penn Machine Company LLC (PMC)** began as a coal company and pioneered the manufacture of quality replacement parts for coal mining equipment. Over the years, the company has grown to become a major supplier of heavy-duty OEM and aftermarket components for transit, railroad, mining, steel, construction, and general industrial applications. Our business is domestic and international in scope. Our capabilities and experience combine to provide a wide range of quality manufactured products and services. PMC is comprised of three market-focused stand-alone business units: Transit, Locomotive, Mining, and Oil and Gas.



The Transit Division is a market leader for resilient wheels, which started with the manufacture of the original President's Conference Committee (PCC) resilient wheel. Today, Penn Transit manufactures loose gears, axles, brake discs, resilient and solid wheels, and wheelsets. It also services and rebuilds rail transit gearboxes and wheelsets.



The Locomotive Division is a leading supplier of locomotive gearing and starter gears to the world's railroads. Its product lines include the carburized and hardened Super Gear™. This premium product is recognized as the standard in the railroad industry.



The Mining/Oil and Gas Division provides quality replacement gearing, gearboxes, crane wheels, pulleys and components to a broad base of heavy industrial markets.



AAR M1003



American Gear Manufacturers Association



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