

DELIVERING | WHAT'S NEXT



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PRODUCTS FOR
PRESSURE RAILCARS

For the Safe Loading, Transport and
Unloading of Hazardous Materials



www.midlandmfg.com

DELIVERING | WHAT'S NEXT

Reduce Your Risk During Pressure Railcar Loading, Transportation and Unloading

Midland's Mission

Since 1951, Midland has been dedicated to supplying the most reliable valves and level measurement devices for the railroad market. With an innovative approach to engineering simple designs that meet the most demanding needs, Midland continuously leads the way in shaping the technological evolution of railroad tank-car transportation equipment that's safe, reliable and easy to use and maintain.

America's chemical-transport companies rely on Midland products for routine, safe handling of some of the most corrosive and volatile chemicals and gases, such as chlorine or liquefied petroleum gas, as well as general service products such as alcohol and corn syrup. No matter what you're shipping you can depend on Midland's market-leading reputation to deliver durable, easy-to-use and safe products that are specifically engineered to withstand the abuse of harsh rail-transport environments and exceed industry standards. We also provide the industry's most responsive technical support backed by innovative engineering design that can solve even your toughest requirements.

This brochure has been designed to offer a comprehensive listing of all of the Midland products that can be used in pressure-railcar applications. These listings include descriptions of the products, features and benefits, and appropriate applications for each.

For more than 70 years, the experts at Midland Manufacturing have been designing and manufacturing high-quality pressure relief valves, loading/unloading angle valves, actuator systems, level-measurement gauges and other equipment for the railroad tank-car industry. Midland is unmatched in design expertise, product offering, quality, support and dedication to customer-focused service. Most of all, Midland will help you feel safe.

Its products meet—in fact, they typically exceed—Association of American Railroads (AAR) regulations. Midland recognizes that it is the responsibility of the shipper to specify the proper railcar valves and fittings for the safe loading, transportation and unloading of products under pressure and has designed these components with the shipper in mind.

Midland's dedication to customer responsiveness is a big part of its success. Its pride and commitment to consistently providing innovative solutions, knowledgeable technical and customer support, and other value-added services to customers go above and beyond expectations. Call today, specify Midland, and reduce your risk during the loading, transportation and unloading of railcars in pressurized atmospheres.



A Legacy of Quality

Seven decades of real-world experience has resulted in a manufacturing company that anticipates the industry's needs and delivers superior products that help protect workers and the environment. This is Midland's legacy of quality. It starts with intuitive product development that answers the needs of the market without compromise, and continues through Midland's innovative engineering design process.

Precision lean manufacturing, using only the highest quality materials, is employed in a flexible, world-class production environment, assuring

on-time delivery of your product. Midland's rigid quality control standards, utilizing statistical process control, promises reliable product performance. Every valve and level-measurement device is thoroughly tested. After testing, critical components are serialized prior to shipping, making them easily traceable for life.

Midland is ISO 9000:2000 certified and an AAR Category F registered facility.



Learn more about NARs. Go to midlandmfg.com and follow the link to <http://nar.aar.com>

Pressure Relief Valves



- Easy to maintain, reliable designs available in internal and top styles
- Interior and exterior valve-body designs are available in every DOT pressure rating, from 75 psig to 450 psig, and flow rates up to 37,000 scfm
- Sealed spring chambers and bubble-tight seal testing of every valve ensure long life and safe operation
- Seals are easily replaced for use with diverse commodities to maximize the in-service time of every tank car

Angle Valves



- Lowest number of potential leak paths in the railcar industry
- Self-centering valve seats provide positive shut off and longer service life
- Spring-loaded valve stems provide constant load on packing rings to maintain stem seal
- Carbon Steel, Stainless Steel, and Monel® body construction
- Various trim materials are available
- Available in 1-, 2-, and 3-inch models for use in the top-loading of pressure cars

Check Valves



- Available for sample-line, liquid-line and vapor-line styles
- Engineered to provide reliable, high flow rates in conjunction with high-flow disturbance sensitivity to help operators achieve safe operation and faster unloading times
- Non-galling assemblies keep valves sliding easily without binding
- Wide range of acceptable flow rates ensure that there are no inadvertent closures that can damage a loading system
- Pressure bypass enables rapid reopening and continued operation after the cause of excess flow is corrected

Needle Valves



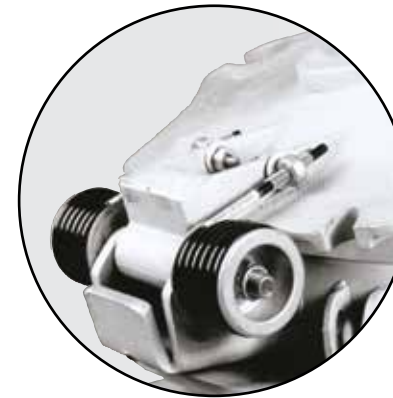
- Keep pressure-car operators safe by allowing sampling of the lading without opening a larger transfer valve
- Quality construction, durability and reliability
- Must be installed with a check valve on the tank side to prevent product loss if the sample valve nipple is inadvertently sheared off
- Stem construction available in Stainless Steel or Hastelloy® C 22
- Body construction available in Stainless Steel or Monel®

Magnetic Gaging Devices



- Provide accurate level monitoring to maximize the complete loading of railcars
- Small mounting-flange size reduces space requirements, making it easier to locate other equipment on the manway plate
- Can retrofit existing gaging devices with a Midland Tank Car Loading System to maintain optimum load levels while reducing required fill time and allowing remote liquid-level management
- Superior component engineering enables long, care-free, accurate operation
- Lightweight floats provide superior reliability and accuracy
- Graphite rods, a stainless-steel specific gravity correction nut and cap, and zinc-plated body and flange deliver long-term resistance to corrosion and fast gage reading

Lift Assisters



- Provide lifting assistance up to 88 pounds, improving operator safety
- Engineered for versatility, durability and ease of use
- Can be used with either insulated or non-insulated manway covers
- Powder-coated springs prevent corrosion in harsh chemical environments
- Unique low-profile design doesn't interfere with personnel on top of the car, won't damage loading/unloading facilities and won't catch operator clothing
- Available in single-spring and double-spring styles

Manway Covers



- Designed to meet unique and specific application requirements
- Made from AAR-approved materials to offer long-term durability and corrosion resistance
- Can be used with either insulated or non-insulated manway covers
- More than 80 available designs meet layout spacing requirements and permit installation of emergency sealing caps over any fitting

Thermowells



- Provide non-contact access to the lading for temperature measurement using a thermometer or thermocouple probe
- Body materials include carbon steel, 316 stainless steel and alloy 20
- Device styles include flange or threaded

MIDLAND PRESSURE RAILCAR PRODUCTS

Reliable Quality and Innovative Design Combine to Provide Peace-of-Mind Safety in the Most Demanding Applications

Angle Valves for Chlorine Service

Midland is committed to producing angle valves that provide safety for pressure tank cars. Longevity, high performance and ease of maintenance is standard for tank cars equipped with Midland Angle Valves. The unique seat design permits self-draining without concern for trapped product or accidental release. Soft, self-centering valve seats provide long life and positive shutoff along with lower operating torques.

Valve Actuators

Connected to external warning sensors, Midland Valve Actuators can close a valve in less than three seconds, minimizing EPA/DOT-reportable releases in the event of a leak in transfer connections.

Automated opening and closing of transfer valves keep workers a safe distance from hazardous ladings at all times.



Pressure Relief Valves

Performance reliability and flexibility of use in one easy-to-maintain, reliable product design.

Internal and external designs are available in every DOT pressure rating, from 75 psig to 495 psig, flow rates up to 37,000 scfm.

Seals are easily maintained and replaced for use with diverse ladings. Testing of every valve assures long, safe operation, even in harsh chemical environments.

Check Valves

High flow rates in conjunction with high-flow disturbance sensitivity and non-galling assemblies help achieve safe operation and faster unloading times.



Magnetic Gaging Devices

Provide accurate level monitoring to ensure the complete loading of railcars, while the small mounting-flange size reduces space requirements, making it easier to locate other equipment on the manway plate.

Needle Valves

Midland Needle Valves keep operators safe by allowing sampling without opening larger transfer valves.



Thermowells

Midland thermowells provide non-contact access to the lading for temperature measurement using a thermometer or thermocouple probe.



Manway Cover

For use on any Pressure Car. Standard and custom-fitting arrangements are readily available.



Lift Assisters

Engineered for versatility, durability and ease of use, Midland Lift Assisters feature a unique low-profile design that doesn't interfere with personnel on top of the car, won't damage loading/unloading facilities and won't catch operator clothing.

