

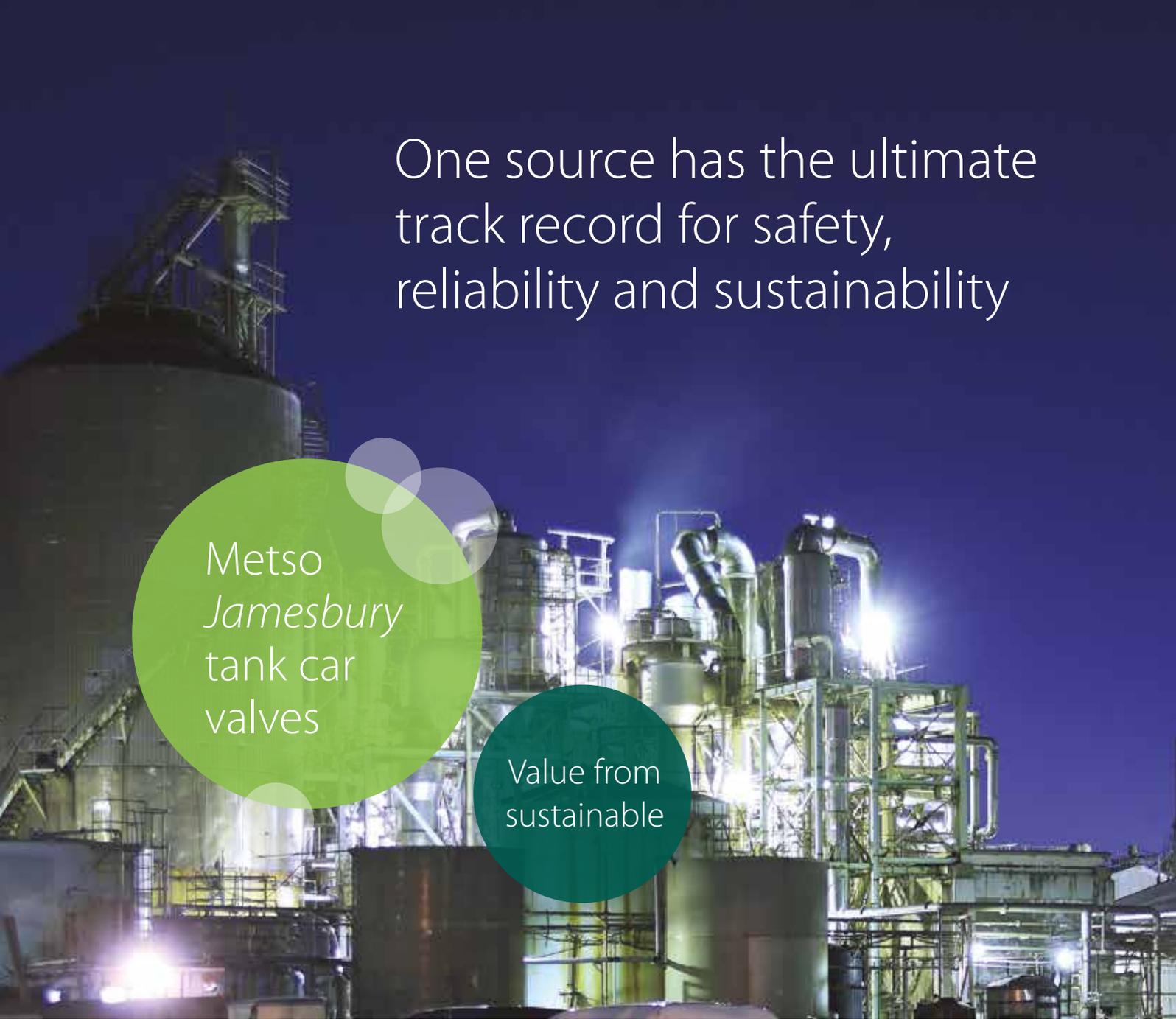
Safety, reliability and availability

Metso Jamesbury® valve solutions
for the tank car industry



Keep
rolling with
Metso





One source has the ultimate track record for safety, reliability and sustainability

Metso
Jamesbury
tank car
valves

Value from
sustainable

➔ **Valves: a critical component on every tank car**

Top and bottom tank car valves are both safety and operationally critical components of general purpose and pressure cars. Valves are essential for containment and are your portal to fast loading and unloading of product, especially under extreme weather conditions – from frozen Northern Canada to heat-blistering Southern Texas. And, while that tank car makes its trek, it is essential for the valve to prevent

Non-Accidental Release (NAR) of product, which lays waste to the environment and can lead to large fines. In addition, valves are critical in the event of a derailment or rollover.

➔ ***Jamesbury* tank car valves: specifically made to work on the railroad**

Metso has you covered on the top and bottom of your tank car with our comprehensive line of *Jamesbury* tank car valves. Metso

has a strong reputation for designing highly engineered products for the most demanding applications. We bring that expertise to the rail car industry, with proven valves and assemblies manufactured right here in the U.S., in our AAR Certified Shrewsbury, Massachusetts facility. When you specify *Jamesbury* valves, you're getting Metso as a partner. Tank car manufacturers and retrofitters all over North America know they can rely on us as their

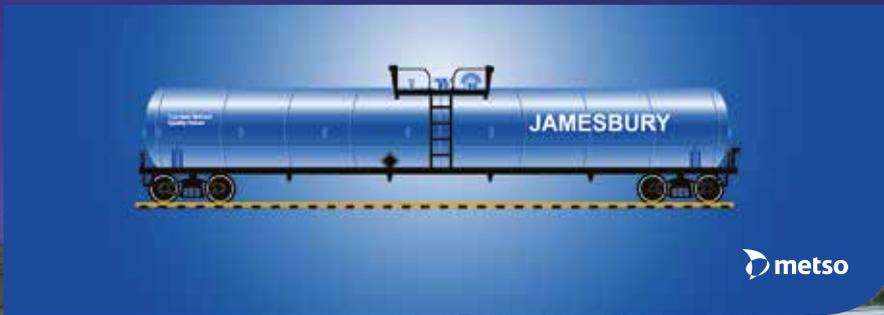
Challenges facing the rail industry



The rapid growth in North American tank car usage in the last 10 years has essentially doubled or tripled the production rates for the manufacturing base. Our strong economy and current GDP growth will continue to add demand for new capacity. Industry participants project continued incremental growth well into the 2020s. As a result, the industry will be challenged to maintain high levels of production and satisfy the needs of all manufacturers.

To add to the pressure, the U.S. Department of Transportation, Federal Railroad Administration, Association of American Railroads and other agencies are scrutinizing the safety of our nation's fleet of tank cars. New regulations, have forced the retrofit of some existing cars, while the demand for new cars continues to grow.

Now, more than ever, you need to mitigate risk with a partner who has an unmatched track record in product quality, safety, reliability and availability.



total capabilities supplier. We'll deftly match your engineering specifications while complying with federal guidelines. And we'll proactively tackle your challenges with all the resources of a global supplier. We have more than 400,000 square feet of manufacturing space in North America alone, and approximately 13,000 employees in more than 50 countries.



"Metso engineers and builds valves for the world's most demanding applications. The advancements produced through extreme application development are applied throughout the product line. That's why even our most ordinary valves feature extraordinary technology and innovation."

Five ways we deliver you the Metso advantage

1 Superior design and R&D



Metso brings comprehensive R&D with advanced design capabilities to every Jamesbury tank car valve.

- We offer proprietary polymeric seat material, Xtreme®, plus a full offering of traditional seat materials including modified Teflon and virgin Teflon.
 - Broad range of temperature and pressure capabilities
 - Extended service life
 - Tight bi-directional shutoff
- Tri-Seal live-loaded patented stem seal design incorporates three zones of contact between the valve, stem and seal.

2 Stringent quality control



Metso quality control for Jamesbury valves is comprehensive and continuous.

It starts with global supplier verification and assessment to ensure that materials are flawless. It extends to our on-premise metallurgy lab where we test and validate those materials. Then, throughout our manufacturing process, we have a complete quality management system in place, including grueling 100% testing before the valves leave our facility. Finally, predictive maintenance and diagnostics ensures a long, reliable life.

3 Compliance



Jamesbury tank car valves are built in an AAR certified facility. Our active and continuous participation in industry technical sub-committees not only provides early awareness of industry issues, it provides a valuable forum for delivering solutions.



4 Value from sustainable business operations



Committed to sustainability. More than 13,000 employees, 84 nationalities and 50 countries. 88% feel strongly engaged. 86% of R&D projects have sustainability targets. 65 sustainability audits for suppliers per year. One of the world's top 50 most sustainable companies. Aligned with UN sustainable Development goals.

5 Unparalleled service and support



Our sales and service network is available 24/7, with complete problem-solving engineering and support along with optimization tools and services to keep you running down the track.



Did you know?

→ *Jamesbury* tank car valves are known for their long history of innovation and proven reliability

The *Jamesbury* line of valves are legendary for standing the test of time, with reliable performance and longer life cycles between maintenance. Our tank car valves have superior seat and stem designs to ensure consistent, trouble-free sealing. We have 50 years of experience supplying tank car valves.

→ They're manufactured by Metso, a total solutions provider

Jamesbury tank car valves are manufactured by Metso, a company that focuses on process performance in a leading global flow control provider for a diversified mix of process industries, and our customer industries consists of petrochemical and chemical, oil & gas, pulp & paper, industrial gas as well as power and other process industries. Our team of 13,000 industry experts are located in more than 50 countries.

→ Sold and serviced by a network of experts

Jamesbury tank car valves are readily available from several large inventory locations located across North America.

Look to our team for:

- A full range of technical training and support
- Experienced applications assistance
- Full maintenance and repair services
- Online customer support 24/7

Innovative,
reliable and at
your service

A full line of Metso *Jamesbury* tank car valves



→ Top tank car applications

	Code	Product description
	9150RR and 9RFT	<p>Full bore flanged ball valves</p> <p>These full-port ball valves come in flanged or flange by threaded-end varieties. They feature our polymeric seat design to provide high flow capacity and offer long-lasting reliable shutoff. Fire-tested to meet the requirements of API 607.</p>
	5RNT	<p>Top loading and unloading standard-port angle ball valves</p> <p>Easy to install and maintain, this angle ball valve provides outstanding reliability and performance in a multitude of top loading and unloading tank car applications. Constructed with <i>Fire-Tite</i>® fire-tested seat design, it also offers quick quarter-turn operation, long service life and easy cycling even after extended periods in one position.</p>
	6RA3	<p>Full bore angle ball valves</p> <p>These full-port angle ball valves are constructed with our <i>Fire-Tite</i> fire-tested seat designs and suitable for right angle hook-up at top loading and unloading stations. With quick quarter-turn operation, long service life and easy cycling, they're much easier to operate than multi-turn valves.</p>
	6FR	<p>Full bore threaded ball valves</p> <p>Series 6FR ball valves, 2-piece, full-port, threaded configuration and 1000psi (69bar) pressure rating make it an ideal choice for applications requiring tight shutoff and maximum flow. With our <i>Fire-Tite</i> fire-tested seat designs, tested to API 607, it handles most commonly encountered chemicals and materials up to the full body rating, including saturated steam up to 275psi (19bar).</p>
	7RRR 7RRT and 7RRU	<p>Top loading and unloading standard-port ball valves</p> <p>Specifically designed for top loading and unloading tank car applications, <i>Jamesbury</i> 7RRR, 7RRT & 7RRU high-performance flanged ball valves ensure free flow and fast handling of abrasive slurries and highly viscous fluids. Short body length to accommodate the top fittings of today's tank cars, and constructed with <i>Fire-Tite</i> fire-tested seat designs, they offer quick quarter-turn operation, long service life and easy cycling. Usable for applications involving abrasive media, steam, and service with temperature fluctuation. Full steam jacket is optional.</p>
	6FRF	<p>Full bore flanged by-threaded ball valves</p> <p>Series 6FRF ball valves, 2-piece, full-port, flange by threaded-end configuration and 1000psi (69bar) pressure rating make it an ideal choice for applications requiring tight shutoff and maximum flow. With our <i>Fire-Tite</i> fire-tested seat designs, tested to API 607, it handles most commonly encountered chemicals and materials up to the full body rating, including saturated steam up to 275psi (19bar).</p>

	Code	Product description
	33R	<p>Screwed NPT ball valves</p> <p><i>Jamesbury Series 33R ball valves are perfect for applications where positive, long-lasting shutoff is required. Ideal for vent, sampling, and gauge locations, these valves provide cost-effective shutoff. Seating options permit the handling of a wide variety of fluids and vapors. Series 33R valves are available in carbon steel with 316 stainless steel trim, or all 316 stainless steel. Seat options include PTFE (T) for services to 400°F (204°C); filled PTFE (M) for abrasive services, service to 500°F (260°C), steam to 175 psi (12 bar), or for applications with wide temperature fluctuations.</i></p>

→ Bottom tank car applications

	Code	Product description
	6R1B3	<p>Internal bottom unloading full-port valves</p> <p>These internal bottom unloading valves can handle a wide range of materials in tank car applications where a low external profile is required. Withstands rugged road and service conditions. With our <i>Fire-Tite</i> fire-tested seat construction, it provides quick quarter-turn operation, long service life, and easy cycling.</p>
	9REL and 9RELS	<p>Bottom unloading full-port valves</p> <p>The 9RELS low-profile flanged ball valve has a face-to-face dimension of only 4 ¾ inches (121mm). <i>Fire-Tite</i> fire-tested seats offer long service life and easy cycling in handling almost all materials including abrasive slurries and viscous fluids. Full steam jacket is optional. 9RELS valves, like the 9REL, are designed to resist the penetration of media such as molten sulfur and similar materials into the normal clearances of the valve where it can solidify. Comes with full steam jacket as standard equipment.</p>
	9RET and 9RETS	<p>Bottom unloading full-port valves</p> <p>The 9REL flanged ball valve has a relatively narrow 6 ¼ inch (159mm) profile and is available in a wide variety of materials to satisfy most tank car applications. With our <i>Fire-Tite</i> fire-tested seat construction, it ensures fast handling of almost all materials including abrasive slurries and viscous fluids. Provides quick quarter-turn operation, long service life and easy cycling, and is available with optional full steam jacket. 9RETS valves are engineered to handle molten sulfur and similar materials without “freezing” caused by solidification within the valve. Comes with a standard full steam jacket.</p>
	WSRR and WSRF	<p>Bottom unloading Wafer-Sphere® butterfly valves</p> <p>The <i>Wafer-Sphere</i> tank car butterfly valve is the most compact valve available for tank car service. Offers low initial and installation costs, with minimum skidding requirements, 100% unloading capability, and easy maintenance. Requires one-third the skid height necessary for conventional bottom outlet valves. <i>Fire-Tite</i> constructed, it is also approved for use with food products such as corn syrup.</p>
	5REB3	<p>Low-profile bottom unloading valves</p> <p>This low-profile ball valve is designed for bottom unloading tank car applications involving minimum clearances. It can be used with or without skids. <i>Fire-Tite</i> fire-tested seats offer quick quarter-turn operation, long service life, and easy cycling even after extended periods in one position.</p>

 For more information
please visit

<https://www.metso.com/products/valves/tank-car-valves/>



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