

North America On-highway Crankshafts Viscous Damper Market to Hit USD 342.1 Million by 2035, Growing at 2.2% CAGR | TMR

North America On-highway Crankshafts Viscous Damper Market to reach US\$ 342.1 Mn by 2035, growing at 2.2% CAGR, driven by rising truck and fleet demand.

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The [North America on-highway crankshafts viscous damper market](#) represents a specialized but critical segment of the automotive components industry. These dampers, typically mounted at the end of crankshafts, absorb and dissipate torsional vibrations that occur during the operation of internal combustion engines (ICEs). By stabilizing engine performance, reducing wear and tear, and improving noise, vibration, and harshness (NVH) performance, viscous dampers extend engine life and enable compliance with increasingly stringent fuel-efficiency and emission regulations.

The market was valued at US\$ 267.4 million in 2024 and is projected to grow at a modest but steady CAGR of 2.2% from 2025 to 2035, ultimately reaching US\$ 342.1 million by 2035. Growth is driven by a combination of regulatory frameworks, increasing demand for durable and fuel-efficient heavy-duty vehicles, and advances in material science and monitoring technologies. However, the rise of electrification poses new challenges, as fully electric vehicles generally do not require viscous dampers.

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Market Dynamics



Stringent Emission Norms and Need for Engine Efficiency

The most powerful catalyst shaping the viscous damper market in North America is the regulatory environment, particularly around emissions and fuel efficiency. Agencies such as the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) have imposed increasingly strict emission limits, particularly on medium- and heavy-duty vehicles. These large-displacement engines are prone to torsional vibrations, which if uncontrolled, can compromise efficiency and durability.

Viscous dampers reduce mechanical stress, stabilize crankshaft systems, and directly support compliance with regulations such as the EPA and NHTSA's Phase 2 Greenhouse Gas (GHG) Emissions and Fuel Efficiency Standards. By attenuating harmful vibrations, they contribute to improved thermal and mechanical efficiency, thus aligning with both emission reduction and fuel economy mandates.

Growth in Heavy-Duty and Commercial Vehicle Production

Heavy-duty trucks and buses account for over 70% of freight transport across North America, making them a backbone of the logistics economy. With supply chains under constant pressure from e-commerce, just-in-time delivery, and regional trade agreements (like the USMCA), fleets demand durability, uptime, and lower total cost of ownership (TCO).

Viscous dampers reduce vibration-related failures in ancillary components such as pulleys and belt drives while minimizing downtime. In turn, this supports fleet operators' financial and operational imperatives.

Technological Advancements in Materials and Monitoring

The industry is undergoing a technological transformation. Developments in advanced composites, high-viscosity fluids, and hybrid-compatible dampers are making products lighter, more durable, and more efficient. Real-time monitoring of damper performance, integrated into telematics systems, is becoming feasible, allowing predictive maintenance that avoids catastrophic engine failures.

Challenges: Electrification and Cost Pressure

Despite steady growth, the market faces headwinds. Full electric powertrains eliminate the need for viscous dampers altogether, and while hybrid vehicles may still require them, the overall long-term demand profile could soften as EV adoption rises. In addition, price competition and raw material cost fluctuations remain challenges for manufacturers, especially in the aftermarket segment.

Market Segmentation

By Vehicle Category

Up to Class 5 Vehicles (up to 19,500 lbs): Smaller trucks and buses that require moderate vibration control but represent a smaller portion of demand.

Class 6 Vehicles (19,501–26,000 lbs): Medium-duty trucks increasingly used for urban freight and regional delivery services.

Class 7 Vehicles (26,001–33,000 lbs): Vehicles that bridge medium and heavy-duty operations, requiring robust dampers due to varied operating conditions.

Class 8 and Above Vehicles (above 33,001 lbs): The largest demand segment, accounting for a significant share of market revenue, as these vehicles endure the heaviest payloads and toughest conditions.

By Sales Type

OEM Segment: Accounts for a majority of installations, as manufacturers integrate viscous dampers into new engine designs to comply with emission standards and performance requirements.

Aftermarket Segment: Plays a crucial role, especially as heavy-duty vehicles often operate for 15–20 years, requiring replacement parts to maintain performance and reliability.

Country Outlook

United States

The U.S. dominates the North American market due to its regulatory leadership, robust automotive industry, and large commercial vehicle fleet. Standards set by the NHTSA mandate annual improvements in fuel economy, prompting OEMs to incorporate advanced damping systems. Moreover, strong aftermarket infrastructure ensures replacement demand remains high.

Leading manufacturers such as Vibratech TVD and American Axle & Manufacturing are headquartered in the U.S., ensuring innovation pipelines and rapid commercialization of new technologies.

Canada

Canada contributes significantly to the regional market, driven by its extensive trucking industry and cross-border trade with the U.S.. Regulations often harmonize with U.S. standards, ensuring consistent demand. The country's colder climate also increases wear on mechanical systems, reinforcing the aftermarket demand for viscous dampers.

Mexico

Mexico's growing role in automotive manufacturing and assembly under the USMCA agreement makes it an important node in the supply chain. While domestic demand is smaller than in the U.S. or Canada, its role as a production hub for OEMs ensures future growth in component demand.

Competitive Landscape

The North American on-highway crankshafts viscous damper market is moderately consolidated, with key players leveraging technological innovation, OEM partnerships, and aftermarket reach to strengthen their positions.

Major Players:

American Axle & Manufacturing, Inc. (AAM): A leader in driveline and metal forming technologies, AAM announced in 2025 a definitive agreement to acquire the UK-based Dowlais Group plc, expanding its global footprint across ICE, hybrid, and EV platforms.

Knorr-Bremse AG: Expanded North American presence through strategic acquisitions, strengthening its position in vibration and noise control systems.

Vibrattech TVD: Specializes in torsional vibration dampers, with a strong U.S. base and aftermarket distribution.

Winkelmann Automotive and ATI Performance Products, Inc.: Known for precision-engineered components in high-performance and commercial applications.

Dayco: Offers a diversified portfolio of automotive components, with viscous dampers forming part of its heavy-duty solutions.

Competition focuses on:

R&D investments for lightweight and hybrid-compatible designs.

Strategic partnerships with OEMs to integrate dampers into next-generation powertrains.

Aftermarket penetration, capitalizing on replacement demand from aging fleets.

Key Developments

September 2024: Knorr-Bremse acquired Alstom's U.S. rail signaling business, expanding its portfolio in powertrain and vibration control.

January 2025: AAM announced its acquisition of Dowlais Group plc, creating a diversified global supplier with expanded ICE and hybrid solutions.

Future Opportunities

Hybrid Integration

While fully electric vehicles do not require viscous dampers, hybrid vehicles with combustion

engines still do. The expected rise of hybrid powertrains in North American fleets provides opportunities for damper manufacturers to develop customized solutions for dual-power systems.

Digital and Predictive Maintenance

Integration of smart sensors into dampers could allow real-time performance monitoring. This data can feed into fleet telematics, reducing unexpected breakdowns and extending maintenance cycles.

Sustainable Materials

As sustainability pressures increase, using recyclable or eco-friendly materials in damper design will align with OEM sustainability goals and regulatory expectations.

The North America on-highway crankshafts viscous damper market is positioned for steady but moderate growth over the next decade. While electrification poses long-term challenges, the continued reliance on internal combustion engines in freight, logistics, and commercial transport ensures sustained demand through 2035.

With a market projected to expand from US\$ 267.4 million in 2024 to US\$ 342.1 million by 2035, growth will be supported by emission regulations, fleet modernization, technological innovation, and aftermarket demand.

Key players such as American Axle & Manufacturing, Knorr-Bremse AG, and Vibratex TVD will shape the competitive landscape through R&D, OEM collaborations, and strategic acquisitions. Opportunities lie in hybrid powertrain integration, smart monitoring, and sustainable materials, which will define the next generation of viscous damper technologies.

Despite challenges, the market outlook remains optimistic, with viscous dampers continuing to play a pivotal role in enhancing engine performance, reducing vibration-related failures, and supporting compliance with regulatory standards in North America's heavy-duty vehicle sector.

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