

# Global trailer

THE INDUSTRY KNOWLEDGEBASE FOR LEADERS

59



[www.globaltrailer.com](http://www.globaltrailer.com)

ISSN 1839-5201



9 771836 520000

## INNOVATION

ZF Brake Actuation Technology  
Faymonville's Valk Welding robot  
SAF INTRA's 20 Years Of Success  
Thermo King Advancer

## BUSINESS

Andreas Schmitz Talks EcoGeneration  
Market Report: Japan  
Factory Tour: Cargo Floor  
Business Knowledge: Wielton

## NEWS

JOST Truck Stop Video Series  
GIGANT Commits To E-Commerce  
Drones, Decarbonisation, Policymaking  
Trailer Deliveries, Acquisitions

# TURNING THE WHEELS OF TRAILER SAFETY AND COST EFFICIENCY

GLOBAL MARKET LEADER FOR TRAILER SYSTEMS, ZF OUTLINES THE IMPORTANCE OF HIGH-QUALITY TRAILER AIR DISC BRAKE AND BRAKE ACTUATION TECHNOLOGY TO IMPROVE ROAD SAFETY AND OPTIMISE OPERATIONAL EFFECTIVENESS.

**T**o bring optimal brake force to the road, an effective wheel-end solution with quality braking and brake actuator technology is of critical importance according to ZF, global expert for commercial vehicle control systems.

## The strength of complete wheel-end-solutions engineering

Having supplied over eight million single-piston air disc brakes and more than 70 million brake actuators to the commercial vehicle market worldwide, ZF understands the importance of wheel-end solutions for OEMs, fleets and drivers. The trailer systems leader is building on its WABCO Trailer Solutions portfolio with a relentless focus on safer operations and an overall reduction in Total Cost of Ownership (TCO). Its wheel-end solutions offer customers a wide range of benefits for daily operations. This includes enhanced safety, regulatory compliance, more vehicle uptime, less maintenance, reduced repair costs and increased payload capabilities.

## Powering safety and efficiency with brake actuators

There are two main types of brake actuators. An onboard service brake chamber reliably actuates the service brake, while a spring brake chamber also enables parking and fail-safe braking. In addition to the proven reliability of UNISTOP service brake chambers, ZF's TRISTOP D spring brake chambers enable all three braking functions: service, parking and fail-safe braking.

TRISTOP D spring brake chambers feature a double diaphragm and provide

Taking Trailer Braking to the MAXX – ZF's latest MAXX 2.0 Trailer Air Disc Brake offers premium safety and braking efficiency. Providing a one-stop solution for brake actuation and air disc brakes, ZF is helping OEMs and fleets improve road safety and reduce the Total Cost of Ownership of trailing equipment.



a tailor-made and cost-efficient solution for trailer applications that must meet specific space and performance requirements. A range of options is available, from a basic application with open-hole design and external release bolt, to premium variants with an internal breathing valve (IBV), a coil clash-free power spring and a new Integrated Release Bolt (IRB). This latest premium IRB design for trailers eliminates the need for an external release bolt and dust plug, helping to significantly improve serviceability. It also increases protection against exterior contamination offering superior inner component protection which helps extend brake chamber life and vehicle uptime. In addition, ZF's IBV technology helps further extend product life by enabling the brake chamber to 'breathe' using clean air from the service side of the chamber. The combination of IBV and IRB technologies fully seals the parking chamber and provides optimal protection.

Today, ZF provides service and spring brake chambers designed for various brake applications. This includes air disc, cam and wedge types featuring different brake chamber sizes and output forces to meet customer needs and whether service, parking and fail-safe braking functions are required.

## Accelerating air disc brake technology makes a world of difference

Foundation braking technology varies across global regions. Air disc brake (ADB) technology is already standard across Europe with only some drum brake applications left. Driven by an increased focus on safety and TCO, air disc brake penetration is increasing across North America. ADB penetration is also rising across Asia, particularly driven by regulatory requirements, notably in China.

Compared to traditional drum brakes,



**TRISTOP D**  
with integrated release bolt

ZF's latest TRISTOP D Spring Brake Chamber with Integrated Release Bolt provides complete protection of the parking chamber from exterior contamination, enables easier servicing, increased vehicle uptime and an extended operational lifetime.

ADB technology helps enhance road safety with shorter stopping distances, provides consistent braking performance even in demanding conditions, offers greater straight-line stability with improved driver comfort and increases vehicle uptimes. A strong exponent of the enhanced safety and efficiency of ADB, ZF is at the forefront of the global commercial vehicle industry's conversion from drum brakes to air disc brake technologies.

## Pioneering single-piston air disc brakes

Within the ADB sector ZF's long mastered single-piston air disc brake technology has been proven to be more reliable and achieves higher braking efficiency levels with consistent brake performance throughout their lifespan compared to other ADB designs. The piston is a vital element of the brake's clamping unit, responsible for transferring output force by pressing the brake pads against the disc. ZF's pioneering, smart and compact single-piston technology achieves the same high output forces as double-piston designs, even in the most demanding applications. As a result of the benefits of this advanced technology, ZF has sold over eight million single-piston ADB systems world-wide, including more than three million systems for trailer applications.

## SUPPORTING TRAILER BUILDERS AND FLEETS GLOBALLY

As a leading global integrated systems provider for commercial vehicle technology, ZF is further building on WABCO Trailer Solutions' global market leadership. This is helping drive advanced safety, operational efficiency, fuel and CO2 reduction, load optimisation and improved driver comfort. ZF offers comprehensive solutions in the technology domains of Vehicle Motion Control, Integrated Safety, Automated Driving and Electric Mobility. With the integration of WABCO, ZF is creating a new level of capabilities to pioneer the next generation of solutions and services for original equipment manufacturers and fleets globally.

## Taking trailer air disc braking to the MAXX

Specifically designed for all types of trailers, ZF's fifth-generation single piston air disc brake MAXX 2.0 offers a 2kg weight saving compared to the previous generation. This, combined with a design which requires up to 40 per cent fewer parts, enables increased transport payloads while reducing TCO. Additionally, its low drag-torque design, with smooth guiding system, contributes to pad resetting in brake-off condition, further boosting fuel efficiency. Engineered with an active taper wear mitigation system, it reduces uneven pad wear and extends pad life. In addition, a newly designed carrier and brake pad system offers improved serviceability for quick and easy pad replacement.

MAXX 2.0 features a unique adjuster mechanism to quickly adapt running clearance during both brake application and brake release. This increases clearance stability to help maintain optimal running clearance. It also provides rapid restoration of brake performance in extreme and long downhill operations and minimises the risk of over-adjusting, a common issue for hot runners. ZF offers solutions for all rim sizes from 17.5" to 22.5" and enables consistent performance of up to 30,000 Nm brake torque.

## The non-stop, one-stop shop

ZF offers an extensive portfolio of tailor-made service brake chambers, spring brake chambers and air disc brakes, including single-piston PAN, MAXX and MAXX 2.0. Based on its extensive engineering experience, ZF provides long-term truck and trailer wheel-end solutions that are proven time and time again to literally go the distance.

Building on widely trusted WABCO braking and brake control solutions, ZF is committed to developing the technologies of the future. This includes advanced braking and vehicle control systems that support the commercial vehicle industry's increasing adoption of autonomous driving, connectivity and electrification (ACE) technologies. ZF is also powering wheel-end advances to support both conventional and electrified vehicles. This includes the development of continuous wear sensors and smart axles which enable continuous real-time monitoring and wheel end diagnostics.

With an industry-leading Aftermarket product portfolio and dedicated support delivered across an unparalleled worldwide service network, ZF is committed to supporting OEMs and the entire fleet and logistics ecosystem with the very latest solutions to further advance safety and operational efficiency – today and tomorrow. **GT**

[www.zf.com](http://www.zf.com) / [www.wabco-auto.com](http://www.wabco-auto.com)

Mobilized by  
WABCO Trailer  
Solutions

# Intelligent Trailer Braking Platform

Industry's first global trailer braking platform offers iABS and iEBS for intelligent trailers worldwide

The Intelligent Braking Platform is ZF's most advanced solution for global OEMs and local trailer specialists alike. Standardization and common components enable lean production and simplified warehousing. Multi-voltage capability and generic communication protocols improve vehicle connectivity, while scalable variants from basic iABS to premium iEBS are applicable to a wide variety of different trailer types worldwide.



Find out more and stay up-to-date:  
[go.wabco-auto.com/trailersolutions](http://go.wabco-auto.com/trailersolutions)

see. think. act.

