

MACK® ROAD STABILITY ADVANTAGE by BENDIX®

MAKING SAFE DRIVERS SAFER

Mack Road Stability Advantage by Bendix (Mack® RSA) provides core antilock braking, along with Bendix® Smart ATC™ and ESP® stability system (covering under-steer, over-steer and rollover situations), the most effective ABS-based traction control and stability system on the market today.

Safety Is The Bottom-Line

Most people don't think of a stability system as contributing to the bottom-line. But when you consider the costs of accident related vehicle damage, down-time, clean-up etc... it's easy to see how it does. For fleets looking to reduce incident potential and improve profitability, Mack RSA provides proven value.

A Competitive Advantage For Your Fleet

- **Protect Profitability** – Every dollar you save through incident reduction goes directly to the bottom-line. Consider this... just to stay profit (bottom-line) neutral, a fleet operating at a 5% margin would need to increase revenue by 20 times the cost of accident related losses. That means reducing accident costs by \$100,000 is equivalent to growing top-line sales by 2 million dollars.
- **Promote Customer Satisfaction** – An accident can result in a late delivery or even damage to your customer's property, which can build ill-will and loss of confidence. Alternately, an investment in a stability system demonstrates the added value that your fleet provides.
- **Enhance Driver Training** – With vocational vehicles, often drivers don't know the vehicle is tipping because they can't feel what's happening until it's too late. Take cement mixers, for example: an asymmetrical load can alter the vehicle's center of gravity (CG) without driver knowledge, leading to a rollover situation. Mack RSA can not only help to mitigate this event, but driving data can be monitored and used as a proactive training tool.
- **Strengthen Operational Efficiency** – The reliability of genuine Bendix components, the familiarity of an ABS-based system, along with a portfolio of easy-to-use diagnostic tools means less training and more vehicle up-time.
- **Boost Driver Retention** – A commitment to safety improves driver morale and can reduce the potential of drivers leaving the profession or going to a competitor.

Mack® RSA by Bendix® – What is it and how does it work?

The system continuously monitors a variety of vehicle parameters and sensors to determine if the vehicle is reaching a critical stability threshold. When such a situation develops, the Mack RSA system will quickly and automatically intervene to assist the driver. The Mack RSA system can selectively apply vehicle brakes, as well as de-throttle the engine typically faster than a human.



The Complete Stability Solution

Mack Road Stability Advantage by Bendix is the only ABS-based truck stability system capable of recognizing and assisting with both roll-over (RSP) and vehicle under- and over-steer (ESP) driving situations and a variety of road conditions. Features include:

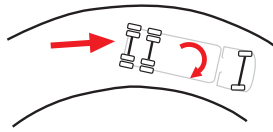
- **Electronic Stability Program (ESP)** – Helps to mitigate jackknives, and loss of control through advanced monitoring of a variety of vehicle parameters and automatic and selective application of vehicle brakes.
- **Roll Stability Program (RSP)** – A subset of ESP, it helps to mitigate rollovers through advanced sensing and automatic application of vehicle brakes.
- **Bendix® Smart ATC™** – Unlike other traction control products, the Bendix® Smart ATC™ traction control system makes adjustments based on the vehicle orientation (straight vs. curve) and the driver's throttle input.
- **Core ABS** – Prevents wheel lock-up to help drivers maintain steering control while braking. Compliance with FMVSS 121 for air brake systems.
- **Diagnostics** – Mack Road Stability Advantage by Bendix offers a suite of diagnostic tools to keep your trucks on the road. From traditional blink codes and "Chuff" at vehicle start, to a portable Remote Diagnostic Unit (RDU), to PRO-LINK™ compatibility, and Bendix® ACom™, our comprehensive, computer-based diagnostic software.
- **Serviceability** – Because Mack RSA is an ABS-based system, most of the components are the same familiar parts used on your current ABS and ATC system. The additional ESP components are based on proven technology and require only simple direct part replacement.
- **Customization** – Our patent pending customization feature allows fleets to add custom functions such as, lift axle actuation, trailer pressure monitoring and more.



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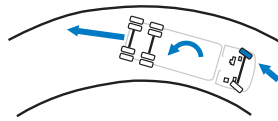
Driving Scenario:

The vehicle speed around a curve exceeds the ability for the tires to hold the vehicle orientation, causing the vehicle to slide and begin to over-steer. The momentum of the load further pushes the truck, exacerbating the situation.



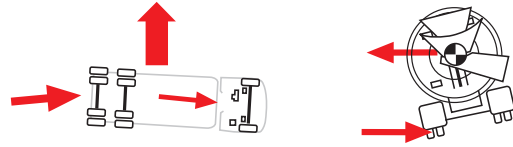
System Response:

Mack Road Stability Advantage by Bendix (Mack® RSA) senses the driver's intended path and compares it to the actual situation to identify an over-steer situation. In an attempt to correct the vehicle orientation and reduce speed if required, the system quickly applies braking pressure to only the appropriate wheels.



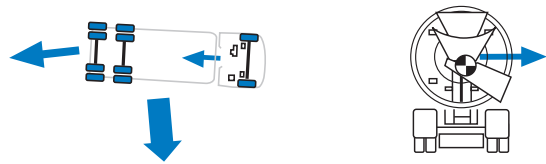
Driving Scenario:

A vehicle enters a curve too fast, on high friction pavement, resulting in high lateral (side) forces acting at the vehicles center of gravity (CG). The high friction between the wheels and the pavement create a "hinge" effect allowing the forces at the CG to push the vehicle over.



System Response:

Mack Road Stability Advantage by Bendix (Mack® RSA) applies pressure to all truck brakes and reduces engine throttle to quickly reduce vehicle speed and therefore mitigate the tendency of the vehicle to roll over.



All Stability Systems Are Not Created Equal

Evaluating competitive stability offerings can be confusing. Considering cost alone is not likely to result in the best solution to meet your return on investment, safety, and driver acceptance goals. To determine the effectiveness of a stability system, consider the following key factors:

- 1) The system's ability to detect potential instability situations quickly and completely;
- 2) The speed and accuracy of system intervention;
- and 3) The ability of the system to apply ample braking.

The table below identifies the key features and components of stability systems to provide a clear picture of the Mack RSA by Bendix advantage.

	Feature	What it does	Why it matters	Wabco® RSC	Mack RSA by Bendix
Mack RSA Sensor Technology	Available in 4S/4M, 6S/4M, and 6S/6M ABS	Available on different ABS / ATC configurations	Better traction and brake performance. Adaptable for the needs of various fleet specific vehicles	✓	✓
	Wheel Speed Sensor	Monitors the wheel rotation at individual wheels	Allows the system to determine vehicle speed and monitor wheel lock-up to optimize braking	✓	✓
	Lateral Acceleration Sensor	Senses the side or lateral forces acting on the vehicle	Side or lateral forces are used to detect a roll situation	✓	✓
	Steering Angle Sensor	Senses the driver's steering and direction	An early indicator of a potential critical maneuver. Helps the system to respond faster and more accurately		✓
	Brake Pressure Sensors	Measures the driver's braking demand	Allows the system to accurately supplement the driver throughout the maneuver		✓
	Yaw Rate Sensor	Senses the rotation of the vehicle	Allows the system to monitor the true orientation of the vehicle and compare it to the driver's intention		✓
Mack RSA Performance Enhancement	Multi-level Sensing	Cross checks multiple system sensors	Improves the reaction time and accuracy of the intervention		✓
	Tuning	Different trucks have different stability characteristics. Tuning adapts the stability system to account for these differences	Improves the ability of the stability system to match the intervention of the situation		✓
	All Axle Braking	The ability to apply brakes at all axles	Provides the best opportunity to reduce vehicle speed in the shortest time		✓
	Individual Corner Braking	The ability to apply individual brakes	Provides the capability to control under- and over-steer situations		✓

Learn how you can help make safe drivers safer with Mack Road Stability Advantage by Bendix. Talk to your Bendix Account Manager or Mack Dealer today.

