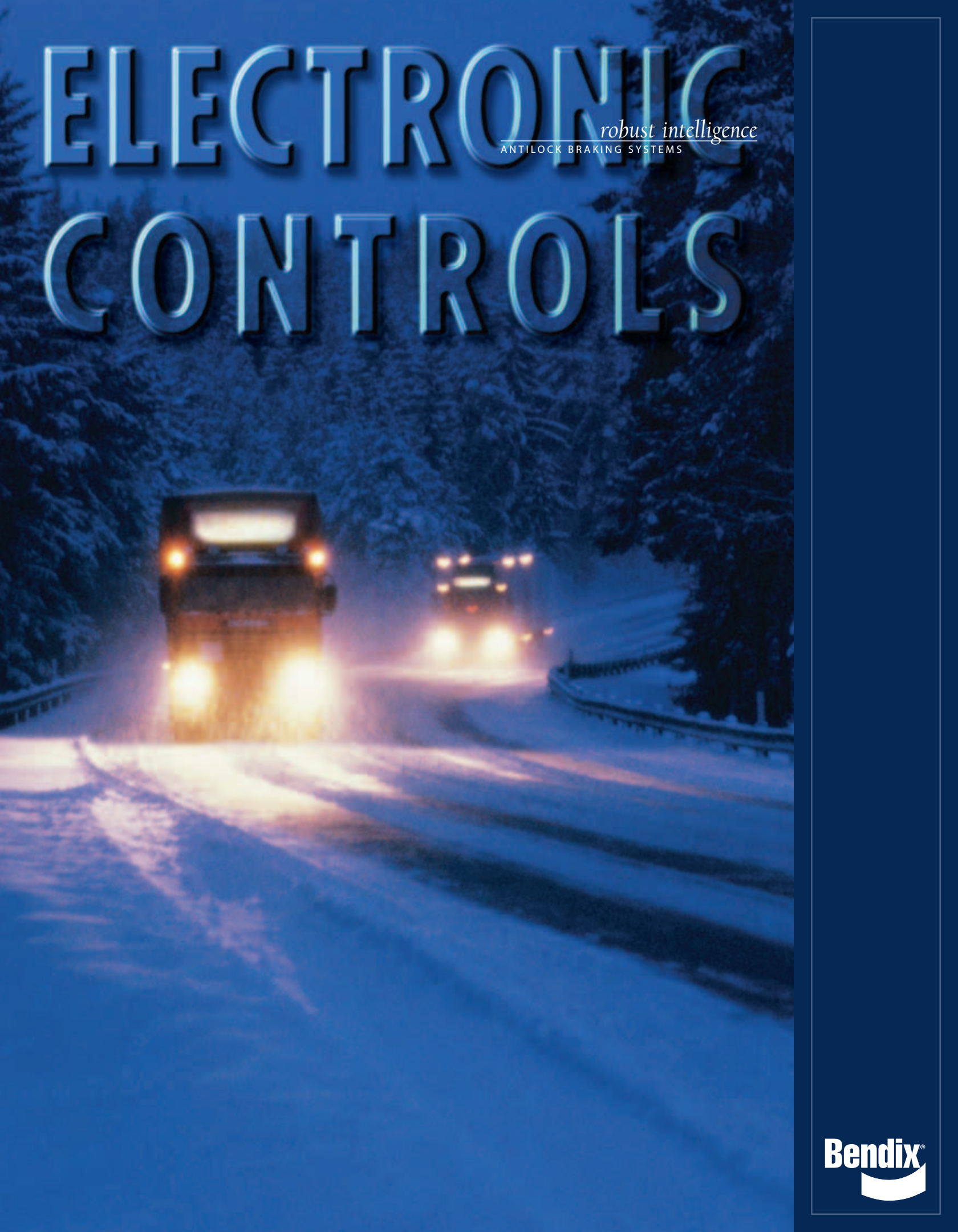


ELECTRONIC CONTROLS

robust intelligence
ANTILOCK BRAKING SYSTEMS



Bendix[®]



BENDIX: THE RIGHT
STRATEGIC PARTNER

Building on more than a century of growth and innovation, Bendix Commercial Vehicle Systems is the worldwide leader in commercial vehicle safety systems.

Bendix is proud of its reputation as the expert in air brake systems and leading-edge safety technologies in North America. Our commitment is to improving driver safety with the highest level of technology, service and product reliability. As a member of the Knorr-Bremse Group, we are the preferred worldwide supplier of commercial braking systems and have developed a global reputation in the industry for designing innovative electronic systems.

More and more, today's commercial vehicle OEMs require suppliers that are capable of producing on a global stage. Bendix Commercial Vehicle Systems is positioned to do just that. We work with our customers to develop strategies that are tailored to meet precise, sophisticated engineering and service requirements worldwide.

BENDIX® ABS-6 POWER VEHICLE PRODUCT SUMMARY

	Standard	Premium	Advanced
Core ABS	●	●	●
Diagnostics	●	●	●
Bendix® Smart ATC™			
Traction Control		●	●
Prognostics		●	●
Customization		●	●
Stability			●

BENDIX® TABS-6 TRAILER PRODUCT SUMMARY

	Standard	Premium
Core ABS	●	●
Diagnostics	●	●
Prognostics		●
Customization	●	●
Stability		

CUSTOMER-DRIVEN ELECTRONICS

Lower operating costs and support growth ... these were the two main customer themes driving the development team of the next generation electronic system from Bendix. And we delivered, with an ABS-based system powered with features to drive your bottom and top line:

- **Diagnostics** – in-house development of new tools can save hours of your shop time.
- **Prognostics** – leverage the ABS monitoring capabilities to identify festering problems early.
- **Customization** – utilize the electronic controller for intelligent feature control, giving your fleet an edge.
- **Stability** – reduce incident potential and help manage costs with our state of the art in driver assistance systems.

ABS: ROBUST INTELLIGENCE

A key aspect of the Bendix strategy was to build upon the cost-effective, well-established North American brake system with proven sensors and algorithms to deliver robust platforms with capabilities previously believed to only be available through ECBS (Electronically Controlled Braking Systems) without the significant training and service challenges.

The Bendix® ABS-6 and TABS-6 platforms are the most intelligent platforms for antilock braking systems on the market today.

Now available in three responsive, power vehicle platforms, ABS-6 Standard, ABS-6 Premium and ABS-6 Advanced, and two trailer platforms, TABS-6 Standard and TABS-6 Premium, our systems feature an initial architecture that holds expansive potential for the integration of future technologies down the road.

BENDIX®
ABS-6 STANDARD

**REDUCED SERVICE TIME,
EFFICIENT DIAGNOSTICS**

If your trucks aren't on the road, they're costing you money. Focusing on quick turnarounds, we offer a suite of diagnostic tools that put accuracy and speed on your side. Equally important, they are tools that match your shop's specific needs, such as experience, technology on the floor, size and other factors.

MORE CONFIDENCE WITH "CHUFF"

In addition to traditional blink codes, the well-known, patented Bendix® "Chuff" is standard on all Bendix systems. By energizing the modulator in a patterned sequence, it provides a quick, audible check to ensure that the system is ready to go or has been repaired correctly.

**ALL YOU NEED –
RIGHT IN YOUR POCKET**

Destined to become a favorite among service technicians, the Pocket RDU (Remote Diagnostic Unit) plugs into the connector on the dash and provides an immediate system status. No waiting for blink codes. No thumbing through manuals.

**PRO-LINK™ DIAGNOSTICS—
AN INDUSTRY STANDARD NOW
TROUBLESHOOTS FOR ABS-6**

- The comprehensive diagnostic tool for engines, transmissions and emissions.
- Resolve system issues with complete information, including intermittent system events.
- Modify system configurations.
- One card for all Bendix ABS systems.



BENDIX® ACOM™ DIAGNOSTICS – COMPREHENSIVE DIAGNOSTICS, CLEAR DIRECTION

Simple, clear instructions allow the technician to move fast and efficiently. ACOM™ diagnostics is an easy-to-use Microsoft Internet Explorer-based program that reduces steps in the troubleshooting process and sends the technician straight to the problem.

- **The repair process moves faster with these immediate visual aids:**
 - Schematics of the vehicle's configuration and how it should be plumbed and wired.
 - ACOM™ diagnostics identifies the specific ECU pins leading to the component in question.
 - Graphical display of the speed sensor data.
- **Solve difficult problems faster with:**
 - An event history of system occurrences, showing precisely which event may have occurred, when, and at what mph.
- **Reduce returns:**
 - Testing individual components before or after repair. This feature ensures that the problem has been correctly diagnosed and addressed.

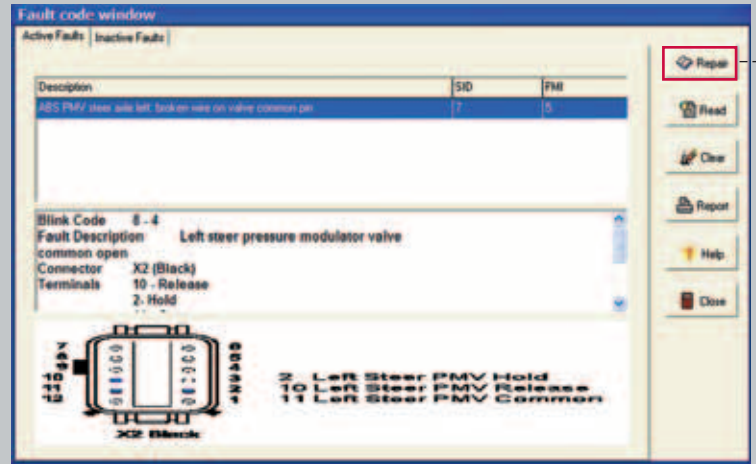


Figure 1.

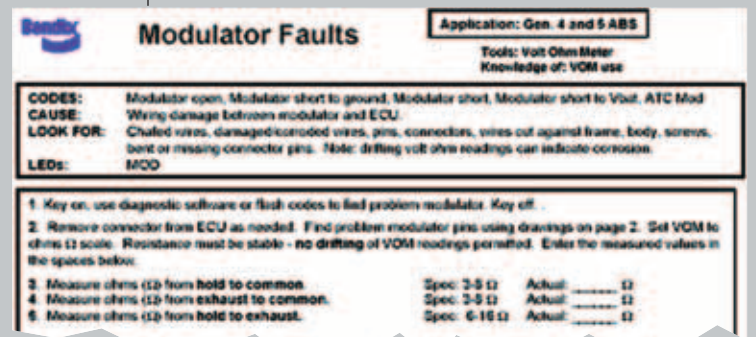


Figure 2.

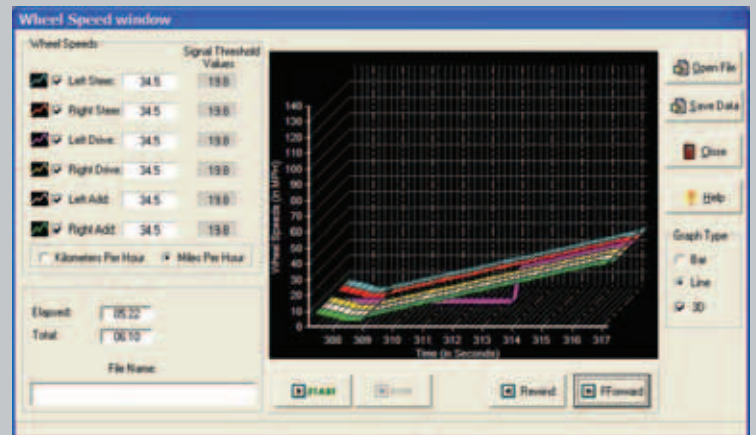


Figure 3.

Figure 1. The Bendix® ACOM™ software fault screen organizes information into three sections or windows. The top window identifies location and cause. The middle window provides brief instructions for addressing the activity. The bottom window identifies the pins in the ECU leading to the component.

Figure 2. At the click of a mouse, ACOM™ diagnostics enables direct electronic reference to a detailed, online Bendix repair manual, with step-by-step instructions for troubleshooting.

Figure 3. The Bendix® ACOM™ software produces three-dimensional line graphs showing comparative wheel speeds, which provide important clues leading to the root of a problem, such as a sensor backed away from a tone ring.



BENDIX®
ABS-6 PREMIUM

BRAKE AWAY FROM THE PACK

Your Bendix® ABS-6 Premium package is equipped with an ECU that has powerful intelligence leveraged to your advantage. It comes Bendix® SMART ATC™ traction control ready, with prognostic and customization capabilities that can help keep you ahead of the competition.

BENDIX® SMART ATC™
TRACTION CONTROL –
KEEP YOUR CARGO MOVING
FORWARD

SMART ATC™ traction control is looking out for you and your cargo. It's different from other ATC products in that it makes adjustments based on the vehicle's on-the-road situation and the operator's input.

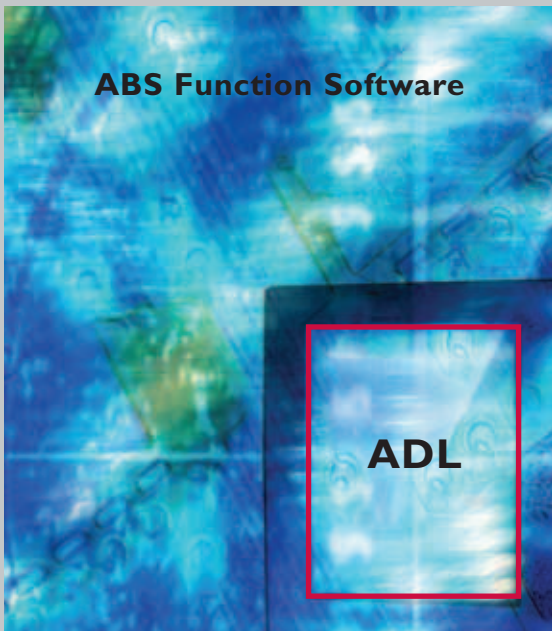
Around curves, it allows less wheel slip for added stability. On slippery hills, if you lean on the throttle, it gives you just what you are asking for – more wheel spin to chew through the snow.

ABS-6 Premium also employs Drag Torque Control (DTC), which aids drive axle wheel deceleration on low-friction surfaces.

PROGNOSTICS – WHAT IF YOU
KNEW BEFORE IT HAPPENED?

We don't want to see your vehicle stranded on the side of the road with perishable cargo. And we don't want to see a small problem cause expensive damage. ABS systems already continuously monitor multiple vehicle systems to ensure the ABS performs correctly. With minor changes and intelligent algorithms, future systems will be able to let you know about emerging or potential situations, such as abnormal brake wear, power supply problems, etc. – so you can reroute your trucks back to your shop for a less costly repair.





Auxiliary Design Language (ADL)

- Enables custom special functions for your fleet.
- Most cost-effective feature control.
- ABS algorithms are protected by a virtual barrier.
- Downloaded to your vehicle through the Bendix® ACOM™ diagnostic tool by the vehicle/trailer manufacturer or in your shop.

Customization Possibilities

- Trailer tracking
- Lift axle actuation
- Slider pin actuation/interlock
- Ride height adjustment
- Trailer pressure monitoring
- Refrigerator temperature management

ECU CUSTOMIZATION – YOUR COMPETITIVE EDGE

Tight margins. Doing more with less. We understand how difficult it can be to compete effectively in today's business environment. Increases in operating efficiency and driver satisfaction can have a significant impact on your profitability and ability to grow.

ABS systems of today are mandated and are already equipped with inputs to monitor sensors, outputs to control external components, communication with other vehicle systems, as well as the tractor-trailer, in addition to the computing capacity to make intelligent decisions. By specifying the Bendix® Premium or Advanced ECU, your vehicles will now be carrying a system that can leverage these capabilities to your advantage.

Our Auxiliary Design Language (ADL) is a patent-pending customization feature that accommodates quick, custom subprograms while strictly maintaining the integrity of the ABS function. Combine this with integrated additional inputs and outputs, access to vehicle information and custom data, and you have a system that can monitor, adjust, interlock, control, broadcast ... the possibilities are endless.

Features that would normally come with their own separate ECU may be able to be added to the Bendix® Premium or Advanced package, achieving a more cost-effective solution. The customization process involves you, the vehicle/trailer manufacturer and Bendix. Talk to your Bendix account manager or vehicle/trailer manufacturer to explore the possibilities.

BENDIX®
ABS-6 ADVANCED



**AN INTELLIGENT INVESTMENT
 IN STABILITY**

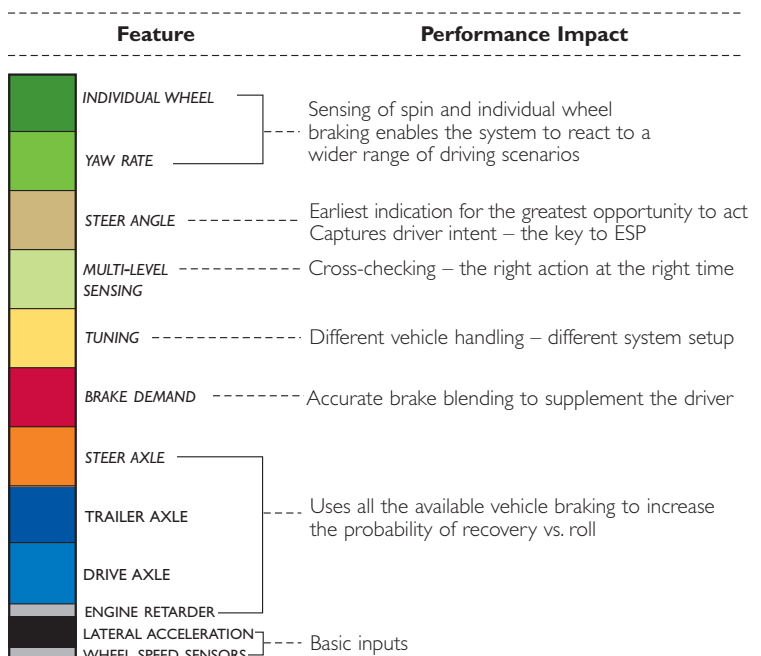
Stability is about operator safety and the financial impact of serious accidents. Not all fleets or operators face the same degree of risk. Bendix account managers are available to assist you in calculating that risk to determine your potential payback.

ABS-6 Advanced with ESP (Electronic Stability Program) responds to a wide range of low- to high-friction surface stability scenarios and includes the Bendix Roll Stability Program (RSP) feature. It is the recommended system for all power vehicles, for fleets that operate in a full range of driving conditions, and especially critical for tractors pulling trailers.

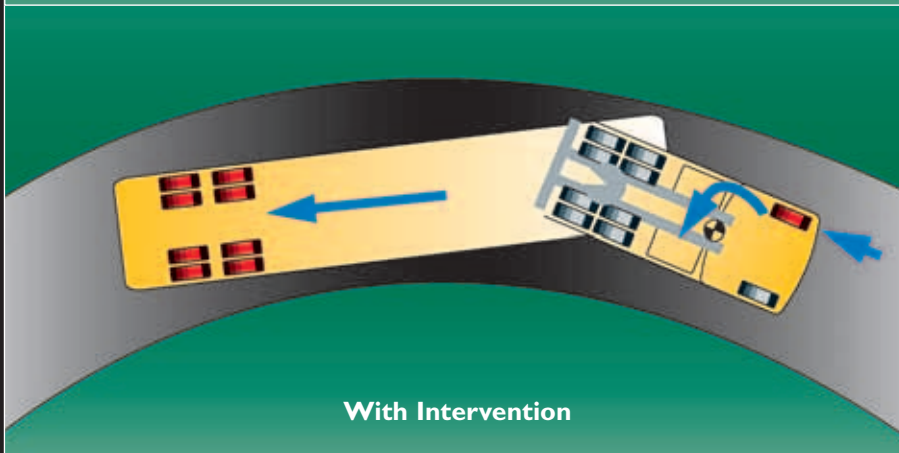
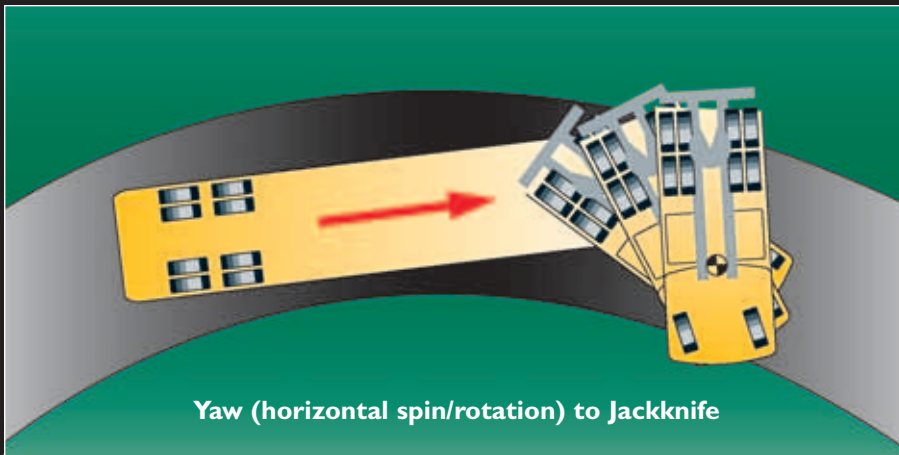
ABS-6 Advanced with RSP (Roll Stability Program) – one element of the Bendix ABS-6 with ESP system – is an effective alternative for high CG straight trucks. By applying all the available vehicle brakes, its all axle solution helps reduce vehicle speed, reducing the tendency for rollover.

Both are designed with a robust system of sensors that continually analyze sensor inputs and make comparative calculations. It decides upon an intervention only after numerous checks have taken place, which helps ensure that a proper intervention occurs.

Note: Stability is a generic term used industrywide. Ensure that your system has these Bendix features:

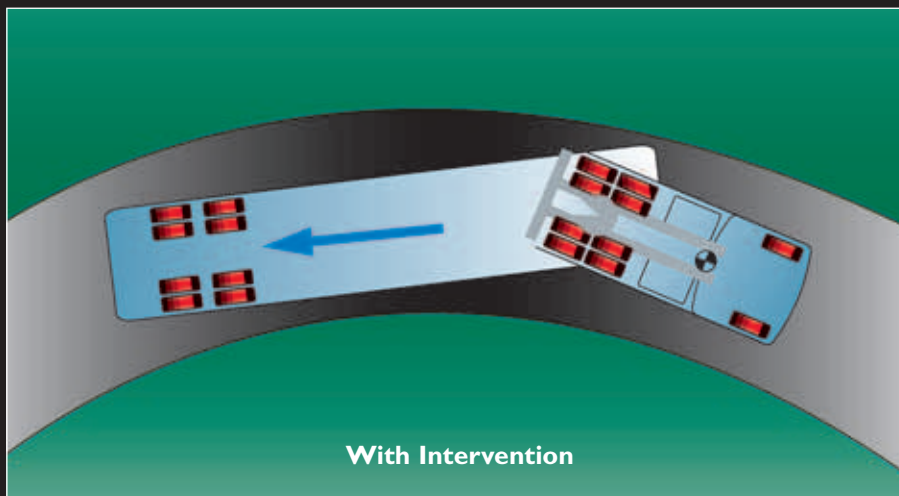
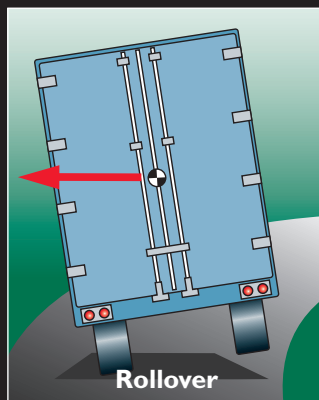


Note: Drivers remain a key element with stability system technology. The best systems will mitigate incidents, but not prevent them in all instances. Driving too fast, over steering, load CG, or road conditions can, at times, exceed the laws of physics and be too much for any stability system to overcome.



Driving Scenario:
 Driving speed exceeds the threshold, and the resulting lateral force causes the vehicle to slide or jackknife on lower-friction surfaces.

Action by Bendix Stability Solutions:
 System applies the appropriate brakes to reduce speed and properly align the vehicle, thereby reducing the tendency to slide or jackknife.



Driving Scenario:
 Driving speed exceeds the threshold, creating a situation where the vehicle is prone to rollover on higher-friction surfaces.

Action by Bendix Stability Solutions:
 System applies all brakes to reduce speed, thereby reducing the tendency to roll over.

**BENDIX® ABS SOLUTIONS ...
RESPONDING
TO YOUR NEEDS**



ABS-6 SYSTEM

TABS-6 SYSTEM

	Standard	Premium	Advanced	Standard	Premium
Sensor (up to)	4	6	6	2	4
Modulator (up to)	4	6	6	1	3
J1587	S	S	S	—	S
J1939	S	S	S	—	—
Mounting	Cab/Frame	Cab/Frame	Cab	Tank/Frame	Tank/Frame
PLC (receive/transmit)	O/—	S/S	S/S	S/S	S/S
Traction	—	O	O	—	—
Customization	—	O	O	O	O
I/O available (up to)	—	6	6	1	6
RSP / ESP	—	—	S	—	—

S = Standard O = Optional / Configurable

Bendix® ABS-6 System includes the following Bendix components:
EC-60™ ECU, M-32™ Modulators and WS-24™ Sensors.

Bendix® TABS-6 System includes the following Bendix components:
TABS-6 Controller and WS-24™ Sensors.



TO FIND OUT MORE, CALL YOUR BENDIX ACCOUNT MANAGER,
CALL US DIRECT AT 1-800-AIR-BRAKE OR VISIT WWW.BENDIX.COM.