



**Vehicle Attachment 4 – Bendix Wingman ACB Active Cruise  
with Braking Operator’s Manual**

**MULTIPLE VEHICLE ACCIDENT  
Cranbury, NJ**

**HWY14MH012**

(14 pages)



Bendix® Wingman® ACB  
Active Cruise with Braking

## Operator's Manual



### **⚠ WARNING**

Warning: Improper use of the Bendix® Wingman® ACB – Active Cruise with Braking System can result in a collision causing property damage, serious injuries, or death. Be sure to read, understand, and follow all these instructions carefully.

DO NOT  
REMOVE FROM  
VEHICLE

This booklet contains important operational and safety information that benefits you and subsequent owners.

# Important Bendix® Wingman® Active Cruise with Braking (ACB) Safety Information

## SECTION 1: GENERAL

### Sources of Additional Information about Bendix® Systems on your vehicle

Consult the vehicle manufacturer's documentation.

Visit [www.bendix.com](http://www.bendix.com) for free downloads of the Service Data sheet listed below, or order paper copies of this publication from the Literature Center at [www.bendix.com](http://www.bendix.com).

- SD-13-3333 Bendix® Wingman® ACB (Active Cruise with Braking) Service Data Sheet
- SD-13-4869 Bendix® EC-60™ ABS/ATC/ESP Controllers (Advanced) Service Data Sheet

or Contact the Bendix Tech Team at [techteam@bendix.com](mailto:techteam@bendix.com) or call 1-800-AIR-BRAKE (1-800-247-2725). Representatives are available Mon.-Fri. 8:00 a.m. to 6:00 p.m. EST.

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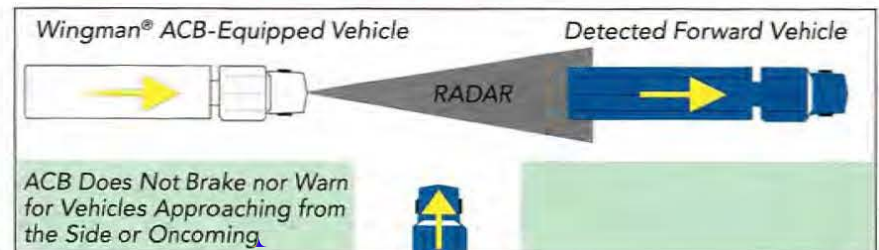
**⚠** Ultimate responsibility for the safe operation of the vehicle remains with the driver at all times. Even with Bendix® Wingman® ACB, you must remain alert, react appropriately and in a timely manner, and use good driving practices.

**⚠** The Bendix® Wingman® ACB system must be used only in the same conditions that are normally recommended for ordinary cruise control. The Bendix® Wingman® ACB must never be used on roads where you cannot drive safely at a steady speed, including city streets, winding roads and sharp curves, downhill grades, poor road conditions, such as gravel, dirt, ice or wet surfaces (wet surfaces may increase the risk of hydroplaning), or in fog, heavy rain or snowy conditions.

In certain situations Wingman® ACB should not be used including: inclement weather; dense traffic or where smaller vehicles – such as motorcycles – are ahead in the same lane; construction zones, off-road use, downhill grades; when entering turning lanes, entering or exiting highways or similar situations. Always switch off or cancel Bendix® Wingman® ACB (by stepping on the brakes or turning off cruise) when entering turning lanes, entering or exiting highways, driving through construction zones, or similar situations. See page 19 for more details.

**⚠** Variations from this Manual – Vehicle manufacturers, and some previous models of Bendix® Wingman® ACB, may use alerts, messages, and dash arrangements that vary from the examples shown here. Consult the Vehicle Operator's Manual for applicable details regarding use and operation.

**⚠** Bendix® Wingman® ACB reacts to vehicles moving in the same direction as your vehicle. The system DOES NOT attempt to brake the vehicle when approaching stopped vehicles, side-to-side moving traffic, or oncoming traffic.



**⚠** When the Bendix® Wingman® ACB system detects a situation that requires intervention, it works in conjunction with the Bendix® ESP® electronic stability system to engage the brakes, **however, the system should never be relied upon to stop your vehicle or to avoid a collision. At most, the Bendix® Wingman® ACB system will apply about one-third of the vehicle's potential braking power.** The driver can, and should still apply full braking power, when needed.

## SECTION 2: DRIVER ALERTS & WARNINGS

**⚠** **Driver Indications and Alerts** – Before using Bendix® Wingman® ACB, the driver should fully understand all the audible alerts and visual indicators that the system provides. This booklet will assist in explaining what each of them means and what actions the driver may be required to take to avoid potential collisions. **Any beeping means that your vehicle is too close to the vehicle ahead.**

**⚠** **The Impact Alert warning is the most severe warning issued by Bendix® Wingman® ACB. This alert indicates the driver must take immediate evasive action by applying more braking power and/or steering clear of the vehicle ahead to avoid a potential collision. The actual display text/sounds vary by vehicle manufacturer. When activated, text appears either on the dashboard screen, or Driver Interface Unit (DIU), and a loud continuous tone, or similar, will sound. The Impact Alert is active whenever the vehicle is moving (whether or not cruise control is engaged.)** When the Impact Alert warning activates, you must take immediate evasive action by applying more braking power and/or steering clear of the vehicle ahead to avoid a potential collision. **NOTE: At most, Bendix® Wingman® ACB will apply up to one-third of your vehicle's braking capability. The driver must apply additional braking, when necessary, in order to maintain a safe distance from the vehicle ahead.**

**⚠** **Following Distance Alert (FDA)** provides both audible and visual alerts whenever the distance between your vehicle and the vehicle ahead is less than the set distance and getting closer. The FDA is active whenever the vehicle is moving (whether or not cruise control is engaged.) If the following distance continues to decrease, the driver will hear more rapid audible alerts. When the distance interval reaches a critical point, typically a red LED also illuminates on the instrument cluster. The FDA may be accompanied by a message on the dash screen saying "Distance Alert", or similar text. Once the audible alert is given, the driver must increase the distance between his/her vehicle and the vehicle ahead until the audible alert stops.

**⚠** **Stationary Object Alert (SOA) – The Bendix® Wingman® ACB system will give up to 3.0 seconds warning to the driver when approaching, in your lane of travel, sizable stationary objects with reflective surfaces. The SOA is active whenever the vehicle is moving (whether or not cruise control is engaged.)**

The driver should be especially careful when approaching certain types of vehicles and objects. The Bendix® Wingman® ACB sensor may not be able to detect vehicles and objects with limited metal surfaces (such as recreational vehicles, horse-drawn buggies, motorcycles, logging trailers, etc.). *NOTE: Entering a curve will reduce the alert time to less than 3 seconds.*

**⚠** **Pedestrians, Animals, Non-metallic or Limited-metallic Objects** – The Bendix® Wingman® ACB system will not warn or react to pedestrians, animals, non-metallic objects, and limited metallic objects.

**⚠** **Reflective Objects May Impair the Radar** – Objects that are reflective, such as crash barriers, guard rails, construction zone barricades, and tunnel entrances may impair the function of the radar sensor.

**⚠** **Brake Overuse Warning** – The Bendix® Wingman® ACB provides a warning when the system is intervening and using the foundation brakes excessively. Overuse of the foundation brakes can lead to the brakes overheating and a potential loss of braking performance from brake fade.

For example, the use of Bendix® Wingman® ACB on downhill runs may cause this alert to be activated. It is recommended that Bendix® Wingman® ACB be disengaged on downhill grades. The driver should use appropriate gearing and brake techniques, not Bendix® Wingman® ACB, on downhill grades. **The primary condition that activates the ACB Brake Overuse Warning is when using Bendix® Wingman® ACB down grades. Approach grades as you would normally, with the appropriate gear selected and at a safe speed. Bendix® Wingman® ACB should not be used on downhill grades.**



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## SECTION 3: EQUIPMENT MAINTENANCE

- ⚠ Importance of Antilock Braking System (ABS) Maintenance** – Optimal Bendix® Wingman® ACB braking requires a properly maintained ABS system, without any ABS Diagnostic Trouble Codes (DTCs). Have DTCs repaired by a qualified technician. Any ABS DTCs will cause ACB to deactivate.
- ⚠ Importance of Brake Maintenance** – Optimal Bendix® Wingman® ACB braking requires properly maintained truck foundation brakes (S-Cam or air disc) which meet appropriate safety standards and regulations. Brake performance also requires that the vehicle be equipped with properly sized and inflated tires, with a safe tread depth.
- ⚠** If a problem with the Bendix® Wingman® ACB system is detected, depending on the vehicle manufacturer, there may be a message on the dashboard display. Depending on the type of problem detected, the system will determine if the vehicle may continue normal cruise control functions (without the benefits of Bendix® Wingman® ACB), or whether all cruise control functions should be disabled until service is performed. The system should be serviced as soon as possible to restore full ACB functionality.
- ⚠ Sensor Inspection** – The driver should inspect the radar sensor and mounting bracket regularly and remove any mud, snow, ice build-up, or other obstructions.
- ⚠ Sensor Damage / Misalignment / Tampering** - In cases where the bumper and/or sensor have sustained any damage, are misaligned, or if you suspect that the sensor has been tampered with, do not use the Bendix® Wingman® ACB system until the vehicle has been repaired and the sensor re-aligned. In addition, an indicator on the dash typically will illuminate if the system detects any of these conditions. Consult your vehicle's Operator's Manual or contact Bendix for more information.

## Table of Contents

Important Safety Information . . . . .	3-6
Bendix® Wingman® ACB Overview . . . . .	9
Operating Bendix® Wingman® ACB . . . . .	11
Switching on the Bendix® Wingman® ACB System . . . . .	11
Adjusting the Cruise Control Speed . . . . .	12
What is Following Distance?. . . . .	12
What to Expect When Using Bendix® Wingman® ACB . . . . .	12-14
How Your Actions Impact Bendix® Wingman® ACB . . . . .	15
Indications and Alerts . . . . .	16
Impact Alert (IA) Warning . . . . .	16
Following Distance Alert (FDA) . . . . .	17
Stationary Object Alert (SOA) . . . . .	17
ACB Brake Overuse Warning . . . . .	18
Potential False Alerts . . . . .	18
When Not to Use Bendix® Wingman® ACB . . . . .	19
Additional Operational Notes . . . . .	20-23
Adjusting the Alert Volume . . . . .	20
Stability System Performance . . . . .	22
Frequently Asked Questions . . . . .	23-24

## Congratulations on Your Purchase!

You are now using one of the latest advances in commercial vehicle technology, the Bendix® Wingman® ACB – Active Cruise with Braking system. This Operator's Manual will help explain the features and functions of this innovative system, enabling you to gain the maximum performance from the system.

Please read this manual thoroughly before operating the enhanced cruise control. Familiarize yourself with the controls, the various system alerts, and what to expect when the system operates. Always keep this manual in the vehicle and use it as a reference for any questions you may have about the system, its operation and performance characteristics.

Thank you for your purchase of the Bendix® Wingman® ACB – Active Cruise with Braking system.



### The Bendix® ESP® Stability System

All vehicles equipped with Bendix® Wingman® ACB are also equipped with the Bendix® ESP® Stability System. Bendix® ESP® stability system is a constantly on, full-stability system which monitors vehicle performance and, when necessary, automatically intervenes to reduce the throttle and/or applies the foundation brakes to help you maintain stability during potential loss-of-control and/or rollover events.

Bendix® Wingman® ACB uses the Bendix® ESP® system to help maintain vehicle stability during automatic brake applications on slick surfaces.

Keep in mind that Bendix® Wingman® ACB should never be used on roads where you cannot drive safely at a steady speed, including city roads, winding roads, or when road conditions are poor, such as on gravel, dirt, ice or wet surfaces (wet surfaces may increase the risk of hydroplaning), or in fog, heavy rain or snowy conditions. Always switch off or cancel Bendix® Wingman® ACB (by stepping on the brake, or turning off cruise) when entering turning lanes, entering or exiting highways, driving through construction zones, or similar situations.

NOTE: The Bendix® ESP® stability system and ACB alerts are always operational when the vehicle is running; the active interventions of the Bendix® Wingman® ACB are only operational when the cruise control is engaged.

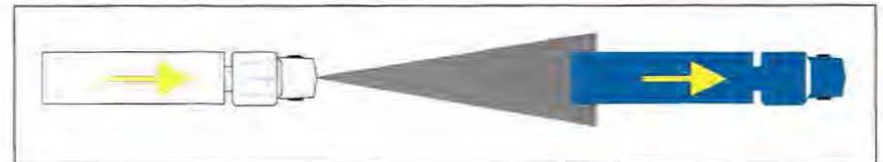
## Bendix® Wingman® ACB Overview

Bendix® Wingman® ACB – Active Cruise with Braking is integrated with the vehicle's normal cruise control. Once the driver switches on and sets normal cruise control, Bendix® Wingman® ACB is automatically engaged.

### What is Bendix® Wingman® ACB?

Think of the Bendix® Wingman® ACB as an additional integrated feature of your cruise control. When using cruise control, your vehicle will not only maintain the set speed, but the system also will intervene, as needed, to help maintain a set following distance behind the vehicle in front of you.

Using a radar sensor (with a range of approximately 500 feet) mounted to the front of your vehicle, the Bendix® Wingman® ACB system reacts to moving vehicles ahead of you.



Once cruise control is engaged and you are maintaining a set following distance between you and the vehicle in front:

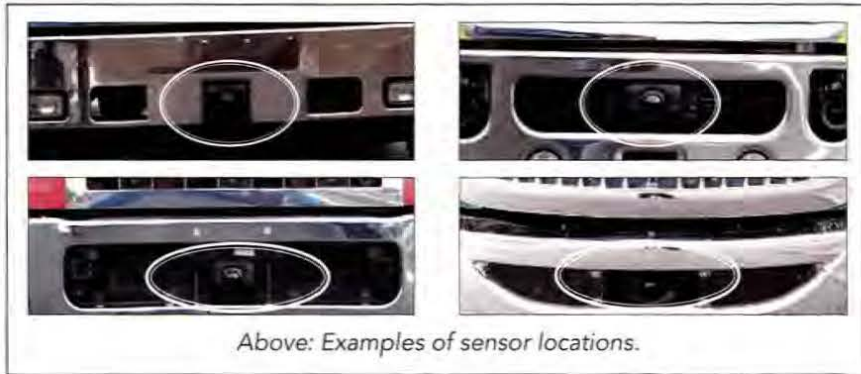
- **If the vehicle in front of you slows down** below your cruise control's set speed, the system will intervene and, as necessary, in this order:
  - (a) de-throttle the engine, and
  - (b) apply the engine retarder, and
  - (c) apply the foundation brakes,in an attempt to maintain the set following distance behind the vehicle ahead. *NOTE: If during the intervention, it is necessary to apply the foundation brakes, the vehicle will not automatically resume to the set speed.*
- **If the vehicle ahead slows, below your cruise control's set speed, but then accelerates away,** and the Bendix® Wingman® ACB system did not need to use the foundation brakes as it managed the intervention, your vehicle will automatically accelerate back to the original cruise control set speed, and again maintain a set following distance behind any vehicles that are ahead of you.

Since Bendix® Wingman® ACB operates along with normal cruise control, all the typical features built into cruise control work as usual. For example, limits imposed by factory-set road speed governors, etc. are fully supported by Bendix® Wingman® ACB.

## Bendix® Wingman® ACB System Components

The radar unit that provides Bendix® Wingman® ACB with its ability to locate and track moving vehicles, is located at the front of your vehicle – either on the bumper or just behind it on a cross-member. When located behind the bumper, in some cases the unit also may be behind a protective covering that allows the radar signal to pass through.

The Bendix® Wingman® ACB radar sensor is pre-aligned at the factory and no adjustment should be needed. If the sensor becomes misaligned, (or any other system problem is detected) a message, or light on the dash lets the driver know that service is needed.



Above: Examples of sensor locations.

## Integrated Dashboard

The Bendix® Wingman® ACB system is either fully integrated into the vehicle dashboard, or uses the Bendix® Driver Interface Unit (DIU). Although the system functions the same, how the alerts are displayed to the driver can be different. This Operator's Manual will show the full range of visual, text and audible indications and alerts to expect from either arrangement. See the *Indications and Alerts* section of this manual on page 16 for more detailed information about the alerts.

*NOTE: For some integrated systems, the volume level of the alerts is not adjustable, nor can they be switched off.*

## Automatic Foundation Brake Applications

The vehicle automatically manages foundation braking priorities among the various vehicle systems that use the foundation brakes, such as ACB (Active Cruise with Braking), ESP (Electronic Stability Program), ATC (Automatic Traction Control) and the ABS (Antilock Braking System).

**After an ACB event where the foundation brakes are applied, normal cruise will automatically be cancelled.** The driver must resume or set the cruise mode in order for the vehicle to throttle up.

## Operating Bendix® Wingman® ACB

*NOTE: Whenever the cruise control is engaged, the Bendix® Wingman® ACB system is also engaged. You cannot engage cruise control without also using the Bendix® Wingman® ACB system.*

## Switching on the Bendix® Wingman® ACB System

Switching on the Bendix® Wingman® ACB system is as easy as using ordinary cruise control.



Examples of cruise control switches

First, switch on the cruise control. Accelerate your vehicle to the cruise speed you wish to maintain, then press the cruise control set switch. Bendix® Wingman® ACB is now engaged and will help you maintain a set following distance.

Once the cruise control speed is set, a green cruise-enabled icon (or similar) will illuminate on the instrument panel. If the cruise-enabled or set (or similar) icon does not illuminate, the Bendix® Wingman® ACB system is not functioning normally. Please refer to your Vehicle Operator's Manual to double-check the location of the icon and for further troubleshooting information. (Bendix contact information is listed on page two of this manual.)

Some vehicle manufacturers use the instrument cluster to momentarily show the cruise control set speed to the driver. Where the Bendix DIU display is used, a text message will provide the set speed information.

The driver can switch the Bendix® Wingman® ACB system off manually by either stepping on the brake, switching OFF the cruise control, or turning the vehicle ignition off.

**NOTE:** Cruise control will automatically cancel whenever Bendix® Wingman® ACB applies the foundation brakes. You can verify the system is disengaged by observing that the cruise-enabled or set icon is no longer illuminated. You must resume or set cruise control in order to regain normal cruise functionality and to reengage the Bendix® Wingman® ACB system.

### The Forward Vehicle Detected Icon

When Bendix® Wingman® ACB is switched on and set and a vehicle ahead of you is detected by the radar, the forward vehicle detected icon, or similar, on the vehicle dashboard will illuminate.

This is an indication to the driver that Bendix® Wingman® ACB is actively managing the distance between your vehicle and the vehicle ahead, and that Bendix® Wingman® ACB may automatically intervene to maintain the set following distance.



Example of DIU forward vehicle detected display

### Adjusting the Cruise Control Speed

Use the switch(es) provided by the vehicle manufacturer to set your cruise control speed. When adjusted, your set speed will typically be indicated on the vehicle dash, message center, or speedometer, etc.

### What is Following Distance?

Following distance refers to the time gap, measured in seconds, between your vehicle and the vehicle ahead. Note that the actual physical distance between your vehicle and the vehicle traveling ahead will vary based on your set cruise speed; although the set time gap remains the same for all set cruise speeds.

### What to Expect When Using Bendix® Wingman® ACB

The following chart illustrates what to expect from Bendix® Wingman® ACB in various driving situations you may encounter. Both the system indication and action to expect from the system are illustrated on the following page.

Situation	System Indication/Alerts	Actions by Wingman® ACB
With cruise set and a forward vehicle present (in range) ahead of you.	The cruise control ON indicator is illuminated and the forward vehicle detected icon will be illuminated.	ACB will maintain the set speed and following distance.
With cruise set, the vehicle ahead slows moderately.	The Following Distance Alert (FDA) – a fast beeping – will sound.	The vehicle will be slowed by (in order) (a) reducing throttle, (b) engaging the engine retarder, or (c) applying the foundation brakes. If the foundation brakes are applied, cruise control and Bendix® Wingman® ACB are cancelled. The driver needs to reengage cruise control.
With cruise set, the vehicle ahead slows rapidly.	The Following Distance Alert (fast beeping) is given, and may be followed by the Impact Alert warning (continuous tone), and a text message appears on the dash screen or Bendix® DIU display.	The vehicle will be de-throttled, the engine retarder engaged and the foundation brakes applied. Bendix® Wingman® ACB cancels after the event; driver needs to reengage cruise.
Cruise not on, or not set, the vehicle ahead slows rapidly.	The Following Distance Alert (fast beeping sound), or Impact Alert warning (continuous tone) is given.	None by the Bendix® Wingman® ACB. The driver must take appropriate action.
With cruise set, but no vehicle ahead detected (vehicles ahead are further away than 500 feet).	None.	Vehicle maintains set speed.
With the cruise set, if a vehicle cuts in front of the truck and speeds away.	Depending on the exact ACB system configuration that has been set for the vehicle, and how close the vehicle cuts in front, Following Distance Alerts will be given to the driver.	Typically, if the vehicle ahead does not cut in within a set distance and then speeds away, the ACB vehicle maintains the set speed.

NOTE: System indicators/alerts may vary, by vehicle manufacturer and/or earlier versions of Bendix® Wingman® ACB, from the descriptions shown here.

Continues over . . .



Situation	System Indication/Alerts	Actions by Wingman® ACB
With cruise set, a vehicle cuts in front of the truck within range of the sensor and slows down.	The system alerts using the Following Distance Alert (fast beeping). Depending on how rapidly the vehicle ahead slows, the system may initiate an Impact Alert warning.	ACB reduces the throttle and retards the engine; the foundation brakes also may be engaged.
With cruise set, and a vehicle detected ahead, the vehicle goes down a grade. (Downhill grade use is not recommended - see page 3.)	If the ACB system intervenes and has to apply the brakes for a long period of time, or applies them repeatedly for an extended duration, a Brake Overuse Warning will appear on the dash display.	(See the CDL manual instructions on proper gear usage for down grades.) ACB de-throttles, then uses the engine retarder, followed by braking. If the brakes remain on for an extended duration, the display requests that the driver intervene, and if ACB detects no intervention, it may shut itself down (see page 18).
With cruise set, a faster vehicle passes on left or right.	None.	None. The driver must take appropriate action, if needed.
A broken-down vehicle is stationary in the lane in which the truck is traveling.	(If configured to do so) a Stationary Object Alert may be issued up to 3.0 seconds prior to impact.	None: Bendix® Wingman® ACB only reacts to detected moving objects.
A deer runs in front of the truck.	None.	None. The driver must take appropriate action, if needed.
Another vehicle crosses the road perpendicular to your path of travel – such as at an intersection.	None.	None. The driver must take appropriate action, if needed.

NOTE: These represent examples of typical situations and responses that may occur when using Bendix® Wingman® ACB, however not all possible situations and responses are covered by this chart.

## How Your Actions Impact Bendix® Wingman® ACB

The following chart illustrates how the Bendix® Wingman® ACB system will react to various actions you may initiate when using Bendix® Wingman® ACB on the road.

If you do this:	Expect ACB to do this:
Step on the brake.	Both cruise control and Bendix® Wingman® ACB will be cancelled.
Step on the accelerator.	Cruise control and Bendix® Wingman® ACB will be overridden until the accelerator is released; then cruise control and Bendix® ACB will resume original set speed automatically.
Switch off the cruise control.	Bendix® Wingman® ACB will turn off. However, the driver will continue to hear all Alerts as needed.
Switch on the cruise control.	Bendix® Wingman® ACB will not engage until the driver selects cruise speed.
Set the cruise control speed.	Bendix® Wingman® ACB is automatically activated, and your vehicle maintains set speed and following distance from the vehicle ahead.
Cover or block the sensor.	Depending on the type and extent of the blockage, Bendix® Wingman® ACB will be diminished or even disabled and a Diagnostic Trouble Code set. A blockage will also affect engine cruise control availability.
Use normal cruise "+/-" switch.	Vehicle speed increased (+) or reduced (-) to achieve the new set speed while actively maintaining the following distance with the vehicle ahead, if one is present within 500 feet.

NOTE: The actions presented above reflect many, but not all, potential driver actions that may interact with the Bendix® Wingman® ACB system.

**Ultimate responsibility for the safe operation of the vehicle remains with the driver at all times.** Even with the Bendix® Wingman® ACB, you must remain alert, react appropriately and in a timely manner, and use good driving practices.

## Indications and Alerts

Bendix® Wingman® ACB is a unique patented system that functions differently than other adaptive cruise control/forward collision alert and mitigation systems. It is important that the driver fully understand the system's features, especially the driver indications and alerts.

Three important alerts provided by the Bendix® Wingman® ACB system are the **Impact Alert (IA) warning**, **Following Distance Alert (FDA)**, and **Stationary Object Alert (SOA)**. All of the alerts are active, whether or not you are using cruise control.

**⚠ WARNING:** Any beeping means that your vehicle is too close to the vehicle ahead.

### The Driver Alerts and Warnings

#### Impact Alert (IA)

- Always ON



Above: DIU - Showing Impact Alert warning - a loud continuous tone will also sound.

Below: Examples of other vehicle manufacturer's displays.



**⚠** This is the most severe warning issued by Bendix® Wingman® ACB. This alert warns that the driver must take immediate evasive action by applying more braking power and/or steering clear of the vehicle ahead to avoid a potential collision. The actual display text/sounds vary by vehicle manufacturer. When activated, text appears either on the dashboard screen, or Driver Interface Unit (DIU), and a loud continuous tone, or similar, will sound. The Impact Alert is active whenever the vehicle is moving (whether or not cruise control is engaged.)

**NOTE:** At most, Bendix® Wingman® ACB will apply up to one-third of your vehicle's braking capability. The driver must apply additional braking, when necessary, in order to maintain a safe distance from the vehicle ahead.

#### Following Distance Alert (FDA)

- Always ON



Above: DIU - Showing Examples of Following Distance Alerts - with progressively faster beeping.

The FDA provides both audible and visual alerts whenever the distance between your vehicle and the vehicle ahead is less than the set distance and getting closer. FDA is active whenever the vehicle is moving (whether or not cruise control is engaged.)

If the following distance continues to decrease, the driver will hear more rapid audible alerts. When the distance interval reaches a critical point, typically a red LED also illuminates on the instrument cluster.

The FDA may be accompanied by a text on the dash screen saying "Distance Alert".

**⚠ WARNING:** Once the audible alert is given, you must increase the distance between your vehicle and the vehicle ahead until the audible alert stops.



Above: Examples of other vehicle manufacturer's displays.

#### Stationary Object Alert (SOA)

- Always ON



DIU: Showing Stationary Object Alert - a continuous tone will also sound.

**⚠** Stationary Object Alert – The Bendix® Wingman® ACB system will give up to 3.0 seconds alert to the driver when approaching, in your lane of travel, sizable stationary objects with reflective surfaces.

The driver should be especially careful when approaching certain types of vehicles and objects. The Bendix® Wingman® ACB sensor may not be able to detect vehicles and objects with limited metal surfaces (such as recreational vehicles, horse-drawn buggies, motorcycles, logging trailers, etc.).

**NOTE:** Entering a curve will reduce the alert time to less than 3 seconds.

## Special Alerts

### ACB Brake Overuse Warning

Bendix® Wingman® ACB provides a warning when the system is intervening and using the foundation brakes excessively. Overuse of the foundation brakes can lead to the brakes overheating and a potential loss of braking performance from brake fade.



For example, the use of Bendix® Wingman® ACB on downhill runs may cause this alert to be activated. It is recommended that Bendix® Wingman® ACB be disengaged on downhill grades. The driver should use appropriate gearing and brake techniques, not Bendix® Wingman® ACB, on downhill grades.

When the Bendix® Wingman® ACB system detects brake overuse, depending on the vehicle manufacturer, a text message will be displayed on the dashboard or an audible alert will be activated. Once the driver applies the brakes or disengages ACB, the alert is discontinued.

If the driver does not respond to the Brake Overuse Warning(s) after a brief delay, the Bendix® Wingman® ACB system will switch itself off. A self-disabled Bendix® Wingman® ACB system will be restored the next time the vehicle is started.

**⚠ The primary condition that activates the ACB Brake Overuse Warning is when using Bendix® Wingman® ACB on downhill grades. Approach grades as you normally would, with the appropriate gear selected and at a safe speed. It is recommended that Bendix® Wingman® ACB not be used on downhill grades!**

### ACB Diagnostic Trouble Codes

The Bendix® Wingman® ACB system monitors the operation of the system. If any malfunction is detected, a Diagnostic Trouble Code (DTC) will be set and the driver will be alerted. The exact alert given depends on the vehicle manufacturer; refer to your vehicle operator's manual and the Bendix Service Data Sheet SD-13-3333 for more information.



### Potential False Alerts

The Bendix® Wingman® ACB system should have significantly less false alerts than earlier systems. Radar technology is not perfect, however, and false alerts sometimes occur. Sensor misalignment will likely lead to increases in false alerts.

Drivers should take into account the road conditions, and any other factors they are encountering, as they choose how to react to any alerts they receive from the ACB system.

### When Not to Use Bendix® Wingman® ACB

**⚠ The Bendix® Wingman® ACB system should be used only in the same conditions that are normally recommended for ordinary cruise control use. There are certain situations when ACB should not be used.**

Do not use the Bendix® Wingman® ACB system in the following situations:

**Inclement Weather** – As with ordinary cruise control, Bendix® Wingman® ACB should not be used in rain, snow, fog, ice or other severe weather conditions that may affect the performance of the Bendix® Wingman® ACB system.



**Dense Traffic** – As with ordinary cruise control, the Bendix® Wingman® ACB system should never be used in heavy traffic.



**Sharp Curves and Winding Roads** – When traveling sharply curved roadways, or highway entrance and exit ramps, the Bendix® Wingman® ACB system should not be used. **CAUTION: Road curvature may impact the radar sensor's ability to track vehicles ahead in the same lane, resulting in potentially unexpected acceleration back to the original set speed.**



**Downhill Grades** – Bendix® Wingman® ACB should not be used on downhill grades.



**Smaller Forward Vehicles** – Smaller forward vehicles, such as motorcycles, may be difficult for the radar to identify. It is the driver's responsibility to be aware of these types of vehicles and to slow down if necessary.



**Construction Zones\*** – Do not use Bendix® Wingman® ACB in construction zones.



**Off-Road\*** – Do not use Bendix® Wingman® ACB in off road conditions.



\* Visit [www.bendix.com](http://www.bendix.com) for more information, and any updates to this restriction.

## Additional Operational Notes

### Adjusting the Alert Volume

The Bendix® Wingman® ACB audible alerts are pre-set at the factory for fully integrated systems and cannot be turned off by the driver, nor can the volume be adjusted, unless configured to do so. For systems using a Bendix® DIU display, see the Service Data Sheet for information about volume adjustment.

### Passing the Vehicle Ahead

If the driver decides to pass a vehicle ahead or change lanes, that vehicle will no longer be tracked by Bendix® Wingman® ACB.

As soon as the vehicle ahead is out of range of the sensor and no other vehicle is present, after a short safety delay, the Bendix® Wingman® ACB system will accelerate to the last stored set speed. The driver can override ACB with the accelerator before passing.

### Acquiring a New Forward Vehicle


As your vehicle approaches a vehicle traveling ahead that was not previously detected by the sensor, the Bendix® Wingman® ACB will automatically lock onto the newly detected vehicle and begin managing the following distance.

### When No Other Vehicles are Present

When no forward vehicle is within range of the sensor, your vehicle will maintain its set speed just like ordinary cruise control. Bendix® Wingman® ACB will continue this behavior until it is either turned off by you, a brake application is made, or a vehicle ahead traveling in the same lane as your vehicle comes into sensor range.


### Radar-Reflective Stationary Vehicles & Objects

The driver should be attentive to stopped vehicles and objects on the roadway.

 **The Bendix® Wingman® ACB system will give up to 3.0 seconds warning to the driver when approaching, in your lane of travel, sizable stationary objects with reflective surfaces, however, no active intervention action (such as de-throttling, engaging the engine retarder or applying the brakes) will be taken.**

The SOA is active whenever your vehicle is moving (whether or not cruise control is engaged.)

## Pedestrians, Animals, Non-Metallic and Limited-Metallic Objects

 Bendix® Wingman® ACB system will not warn or react to pedestrians, animals, non-metallic objects, and limited metallic objects. **The Bendix® Wingman® ACB system only reacts to moving vehicles and will not alert the driver or decelerate the vehicle when approaching non-metallic objects.**

The driver should always be especially aware when approaching certain types of vehicles and objects with limited metallic surfaces (such as recreational vehicles, horse-drawn buggies, motorcycles, logging trailers, etc.) traveling in your lane. The Bendix® Wingman® ACB sensor may not be able to detect them, nor warn or manage the distance between your vehicle and the vehicle or object ahead.

### Tracking Vehicles in a Curve

When following a curve in the road: If a vehicle ahead is no longer detected as you travel around a sharp curve, Bendix® Wingman® ACB will delay acceleration back to the set speed until it regains contact with the vehicle ahead, or determines that there is no longer a vehicle ahead, after a time gap based on the last following distance recorded.

Example: Assume normal cruise control is set at 50 MPH and you are following 3 seconds behind a vehicle traveling at 45 MPH that just entered a sharp curve. If the vehicle ahead is no longer detected as you travel around the curve, Bendix® Wingman® ACB will delay its acceleration back to 50 MPH for 3 seconds.

**The operator should be especially attentive to Bendix® Wingman® ACB system behavior through curves.** In some cases, when traveling around a curve, the radar may lose the vehicle ahead and attempt to accelerate when going back into conventional cruise control.

It is also possible for Bendix® Wingman® ACB to begin tracking vehicles in other lanes when traveling around curves. In cases where the Bendix® Wingman® ACB system perceives that an adjacent-lane vehicle is in your lane, the system may intervene and begin making brake applications.

### Applying the Brakes Before the System Does

If the driver determines that a hazard or unsafe condition exists, you should take all necessary actions immediately. **Never wait for the Bendix® Wingman® ACB system to intervene.**

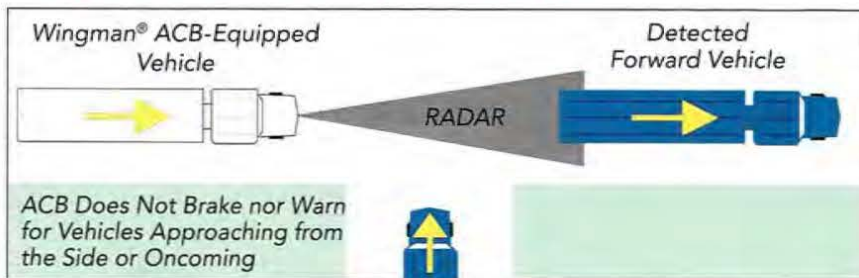
**Safe operation of the vehicle is the responsibility of the driver. If the driver applies the brakes, cruise control will disengage automatically, and no Bendix® Wingman® ACB intervention is necessary.**

## Approaching Slower Moving Vehicles

When approaching a much slower-moving vehicle ahead, the driver should anticipate this and begin applying the vehicle's brakes early. **Do not wait for the Bendix® Wingman® ACB system to intervene.**

## Vehicles Crossing Your Path or Coming Towards You

**⚠** Bendix® Wingman® ACB warns and reacts **ONLY** to vehicles moving in the same direction as your vehicle (by adjusting the engine throttle/retarder, or by applying the brakes) — but **DOES NOT** respond to side-to-side moving traffic, or oncoming traffic. The system **WILL NOT** slow your vehicle or provide an alert as you approach vehicles in these circumstances.



## Stability System Performance

See the Bendix® ABS/ATC/ESP Operator's Manual, included in this vehicle, for details about the stability system.

**⚠** **Importance of ABS Maintenance** – Optimal Bendix® Wingman® ACB braking requires a properly maintained ABS (Antilock Brake System) system. Have any ABS Diagnostic Trouble Codes (DTCs) corrected by a qualified technician at the earliest opportunity.

## System Maintenance and Troubleshooting

**⚠** **Importance of Foundation Brake Maintenance** – Optimal Bendix® Wingman® ACB braking requires properly maintained truck foundation brakes (S-Cam or air disc) which meet appropriate safety standards and regulations. Brake performance also requires that the vehicle be equipped with properly sized and inflated tires, with a safe tread depth.

### Preventive Maintenance:

The Bendix® Wingman® ACB system is relatively maintenance free. The key items to keep the system functioning properly include:

1. Keep the sensor lens clean and free of obstructions.

2. Inspect for any damage to the bumper or Bendix® Wingman® ACB cover, bracket or sensor to ensure that the alignment has not been compromised. **Never use the sensor as a step.**
3. Perform appropriate inspections of the braking system as required by the manufacturer to ensure brakes are in proper working order.
4. Ensure that the tires are properly inflated and that adequate tread is present.

## When the Bendix® Wingman® ACB System Isn't Working:

**⚠** If the Bendix® Wingman® ACB system has detected a problem, depending on the vehicle manufacturer, there may be a warning message on the dashboard display - see right for the Bendix® DIU problem alert display. The system will determine, depending on the type of problem detected, if the vehicle may continue to have normal cruise control functions (without the benefits of Bendix® Wingman® ACB), or if all cruise control functions need to be disabled until servicing is carried out. The system should be serviced as soon as possible to restore full ACB functionality.



DIU: System Problem Warning

## Frequently Asked Questions

1. **Are automatic foundation brake interventions always active?**  
No. Before Bendix® Wingman® ACB will activate the foundation brakes, the vehicle's cruise control must be switched on and set by the driver.
2. **Are the three driver alerts always active?**  
Yes. All three driver alerts (Impact Alert, Following Distance Alert and Stationary Object Alert) are always active and ready to alert the driver regardless of whether or not cruise control is operating, unless a DTC is set.



Example of Impact Alert Warning Display



Example of Following Distance Alert Display



Example of Stationary Object Alert Display

3. *How can I tell the difference between the alerts?*

Beeping means that you are following too close to the vehicle ahead.



**A solid tone means you should actively apply the brakes because the Bendix® Wingman® ACB braking capability (one-third of the vehicle's potential braking power) is not enough to ensure a safe following distance. The alerts are audibly different to assist the driver to pay full attention to the road, not the dash.**

4. *My previous system had a lot of false alerts. How many false alerts can I expect with your system?*

The Bendix® Wingman® ACB system should have significantly less false alerts than earlier systems. Radar technology is not perfect, however, and false alerts sometimes occur.

5. *Are the brake activations with Bendix ACB the same as brake activations I've experienced with most earlier systems?*

No. In addition to reducing throttle and engaging the engine retarder, Bendix® Wingman® ACB also activates the foundation brakes, up to one-third of the vehicle's total braking power. Situations requiring more braking force require the driver to apply the brakes.

6. *Does Bendix® Wingman® ACB detect stationary objects?*

Yes. The system will provide up to 3.0 seconds alert when approaching sizeable, reflective objects in your lane.

### Other Information

#### FCC Part 15

This device complies with part 15 of the FCC Rules with the limits for a Class B digital device and with RSS-210 of Industry Canada. Operation is subject to the following two conditions: (1) this device may not cause harmful interference; (2) this device must accept any interference received, including interference that may cause undesired operation.

