



**Bendix™ FLR10™ Radar Upgrade
Instructions: Bendix® Wingman® ACB to
Bendix® Wingman® Advanced™**

**Bendix Retrofit Support
Phone Number
440-284-6573**



GENERAL SAFETY GUIDELINES



**WARNING! PLEASE READ AND FOLLOW THESE INSTRUCTIONS
TO AVOID PERSONAL INJURY OR DEATH:**

When working on or around a vehicle, the following guidelines should be observed **AT ALL TIMES**:

- ▲ Park the vehicle on a level surface, apply the parking brakes and always block the wheels. Always wear personal protection equipment.
- ▲ Stop the engine and remove the ignition key when working under or around the vehicle. When working in the engine compartment, the engine should be shut off and the ignition key should be removed. Where circumstances require that the engine be in operation, **EXTREME CAUTION** should be used to prevent personal injury resulting from contact with moving, rotating, leaking, heated or electrically-charged components.
- ▲ Do not attempt to install, remove, disassemble or assemble a component until you have read, and thoroughly understand, the recommended procedures. Use only the proper tools and observe all precautions pertaining to use of those tools.
- ▲ If the work is being performed on the vehicle's air brake system, or any auxiliary pressurized air systems, make certain to drain the air pressure from all reservoirs before beginning ANY work on the vehicle. If the vehicle is equipped with a Bendix® AD-IS® air dryer system, a Bendix® DRM™ dryer reservoir module, or a Bendix® AD-9si® air dryer, be sure to drain the purge reservoir.
- ▲ Following the vehicle manufacturer's recommended procedures, deactivate the electrical system in a manner that safely removes all electrical power from the vehicle.
- ▲ Never exceed manufacturer's recommended pressures.
- ▲ You should consult the vehicle manufacturer's operating and service manuals, and any related literature, in conjunction with the Guidelines above.
- ▲ Never connect or disconnect a hose or line containing pressure; it may whip and/or cause hazardous airborne dust and dirt particles. Wear eye protection. Slowly open connections with care, and verify that no pressure is present. Never remove a component or plug unless you are certain all system pressure has been depleted.
- ▲ Use only genuine Bendix® brand replacement parts, components and kits. Replacement hardware, tubing, hose, fittings, wiring, etc. must be of equivalent size, type and strength as original equipment and be designed specifically for such applications and systems.
- ▲ Components with stripped threads or damaged parts should be replaced rather than repaired. Do not attempt repairs requiring machining or welding unless specifically stated and approved by the vehicle and component manufacturer.
- ▲ Prior to returning the vehicle to service, make certain all components and systems are restored to their proper operating condition.
- ▲ For vehicles with Automatic Traction Control (ATC), the ATC function must be disabled (ATC indicator lamp should be ON) prior to performing any vehicle maintenance where one or more wheels on a drive axle are lifted off the ground and moving.
- ▲ The power **MUST** be temporarily disconnected from the radar sensor whenever any tests **USING A DYNAMOMETER** are conducted on a vehicle equipped with a Bendix® Wingman® system.

Contents

Program Overview	3
Bendix® Utility Case Contents	4
A. Vehicle Faults	5
B. Computer Sign-In.....	7
C. Using Bendix® ACom® Software to Create Reports	10
D. Identify Existing Radar	16
E. Bendix™ FLR10™ Radar Software Upgrade	19
F. Programming Vehicle Software	25
G. Saving a Successful Download	30
H. Vehicle Power-Up Self-Test	32
I. Visor Sticker & Operator's Manual Locations	34



Program Overview

The use of a special Bendix® utility case is needed to upgrade vehicles with the Bendix® Wingman® ACB system to the Bendix® Wingman® Advanced™ system. The utility case contains all of the necessary software, harnesses and special tools to complete the upgrade.

All vehicles scheduled to receive the upgrade have been pre-approved. In order to complete the upgrade, the vehicle cannot have any existing active faults.

Bendix® ACom® diagnostic software reports must be made before and after the upgrade. The ACom software program—included on the computer contained in the utility case— provides prompts during the process and gives feedback on a successful upgrade.

Have questions or need assistance regarding the installation process? Contact Bendix Retrofit Support at 440-284-6573. A Bendix representative will respond to you within three hours of your call, 24/7/365.

After completing the upgrade, be sure all the tools, harnesses, etc. are placed back into the utility case for the next vehicle's upgrade.

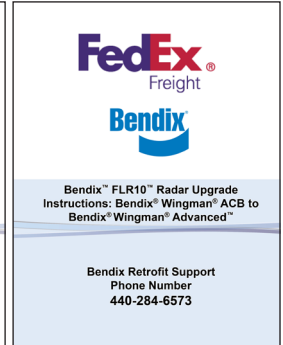
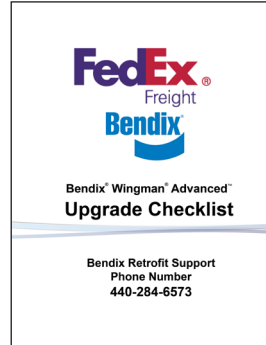


Bendix® Utility Case Contents



Utility Case

Checklist and Instructions



Bendix® Wingman® ACB Box

Computer Power Cord



Alignment Tool, Plate & Clip

Gray Diagnostic Cable

Yaw Rate Sensor Cable

Computer

IMPORTANT: Do not disconnect any cables from the computer. Do not remove the computer from its foam packaging in the utility case. If access to the items in the lower level of the box is needed, lift the foam packaging out with the computer.





Vehicle Faults

Vehicle Faults

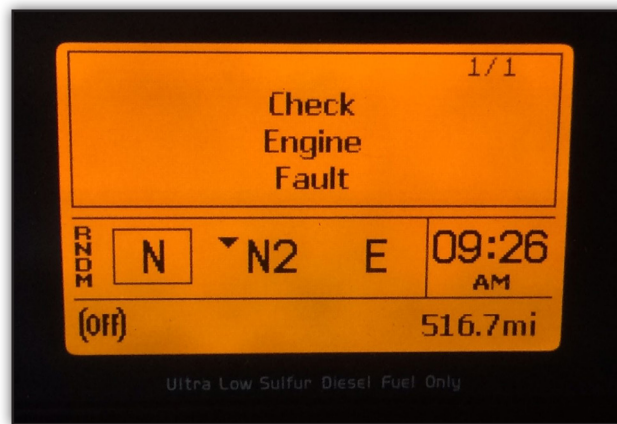
Make Sure The Vehicle Has No Faults

Check the tractor's instrument panel for faults.

If needed, use the Bendix® ACom® software or the OEM's diagnostic tool to troubleshoot and fix any faults. Refer to the Bendix Service Data sheet for additional troubleshooting information for your system. Note that the Service Data sheets are available on the desktop of the computer. *See the chart below.*

For ACom troubleshooting, click the program's "Help" icon.

The upgrade will not be successful if the vehicle has any faults.



Description	Service Data Sheet Number
Bendix® Wingman® Advanced™ (FLR10™ Sensor)	SD-61-4962
Bendix Wingman Advanced System (FLR20™ Sensor)	SD-61-4960
Bendix® EC-60™ ABS / ATC / ESP Controllers (Advanced)	SD-13-4869
Bendix® ESP® EC-80™ Controller	SD-13-4986





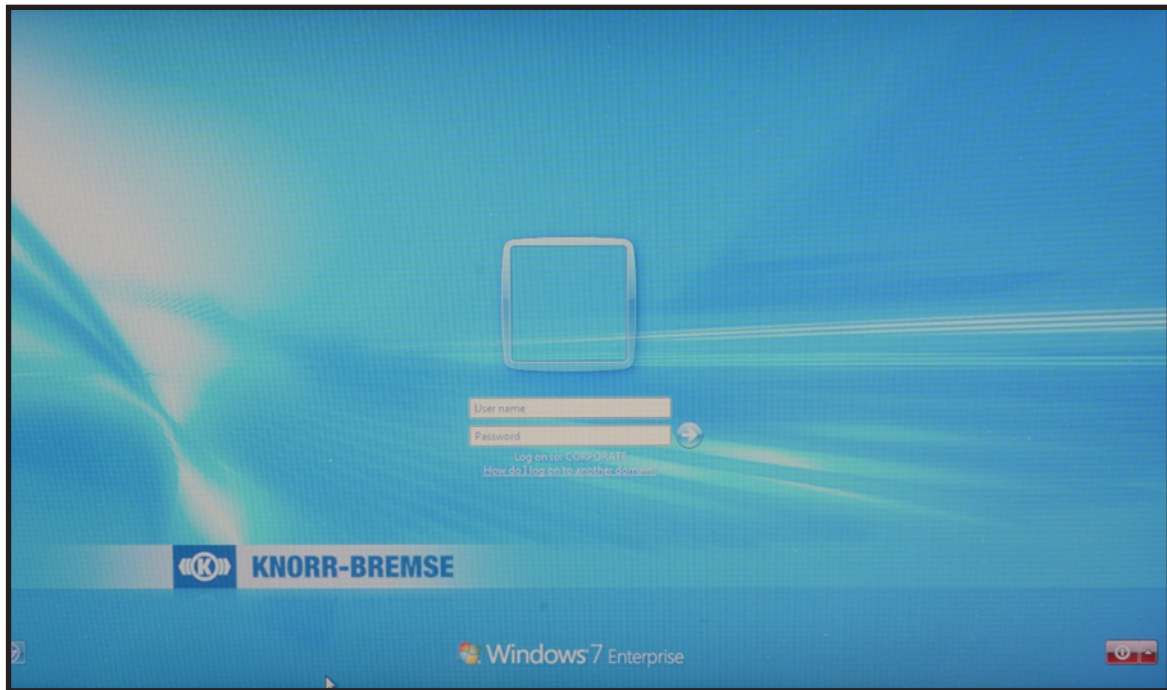
Computer Sign-In



Computer Sign-In

Start the Computer

1. Open the Bendix® utility case.
2. Plug in the computer power supply and turn on the computer.



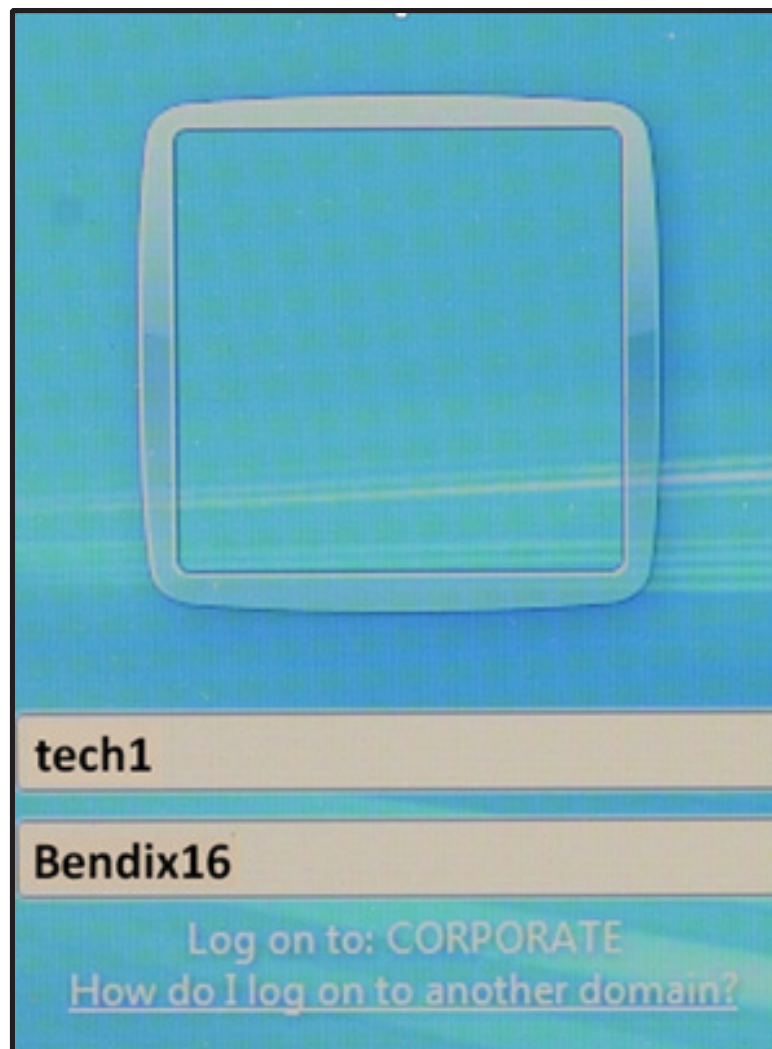
Computer Sign-In

The Sign-in Process

User Name: **tech1**

Password: **Bendix16**

The user name and password are case sensitive.





C

Using Bendix[®] ACom[®] Software to Create Reports



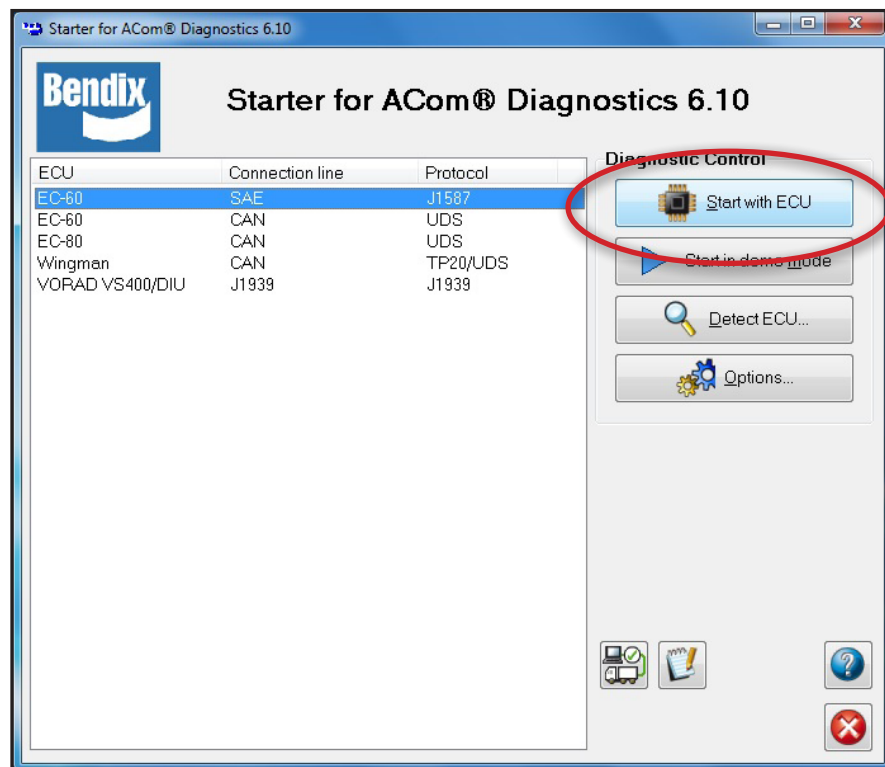
Using Bendix® ACom® Software to Create Reports

Creating Reports

1. Double-click the “Bendix ACom Diagnostics” icon on the computer screen.



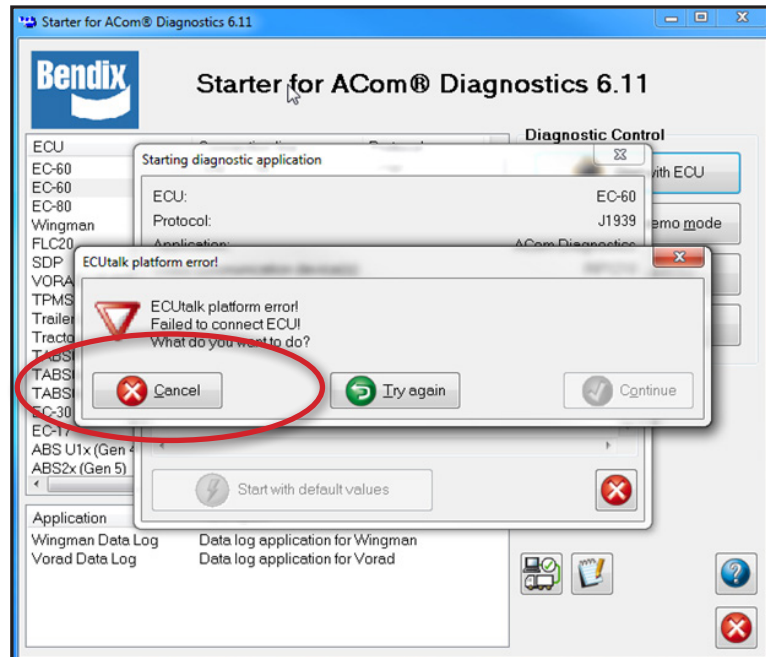
2. Highlight and select “EC-60 (J1587)” then double-click the “Start with ECU” button.
3. Click the “DTC” button.



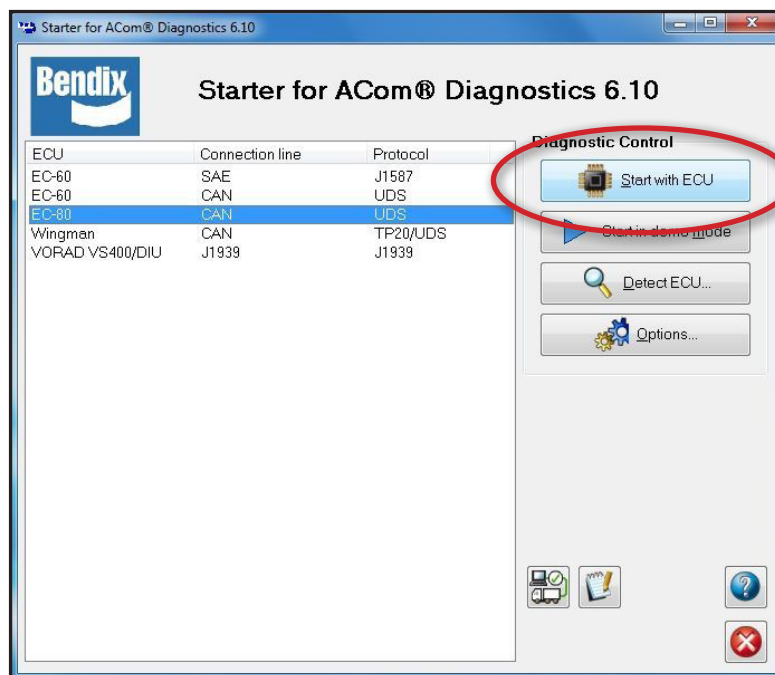
Using Bendix® ACom® Software to Create Reports

Creating Reports, continued

If an “ECUtalk platform error!” appears on the screen:



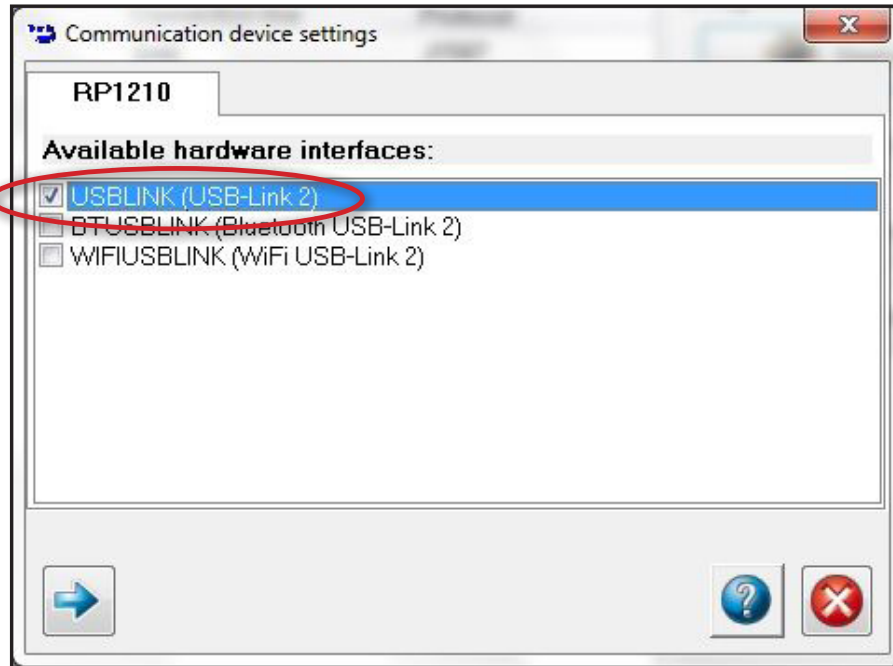
4. Select “Cancel” and then highlight and select “EC-80 (ABS ECU).”
5. Select the “Start with ECU” button.



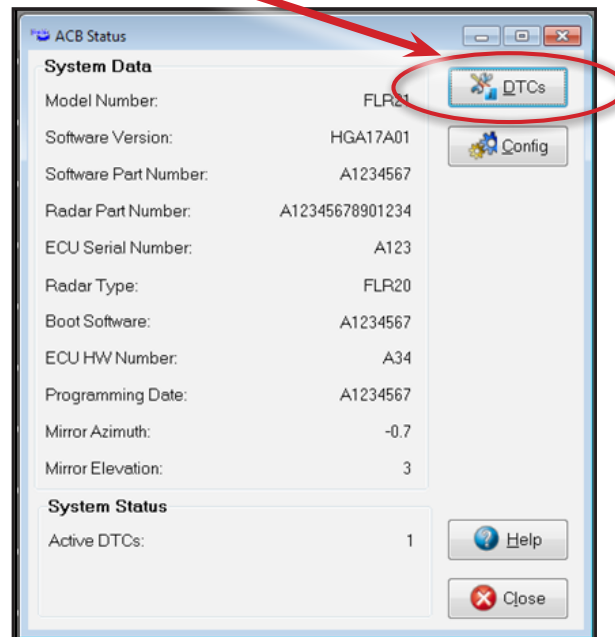
Using Bendix® ACom® Software to Create Reports

Creating Reports, continued

6. Select USBLINK (USB-Link 2) and, if prompted, click the “blue arrow” button.



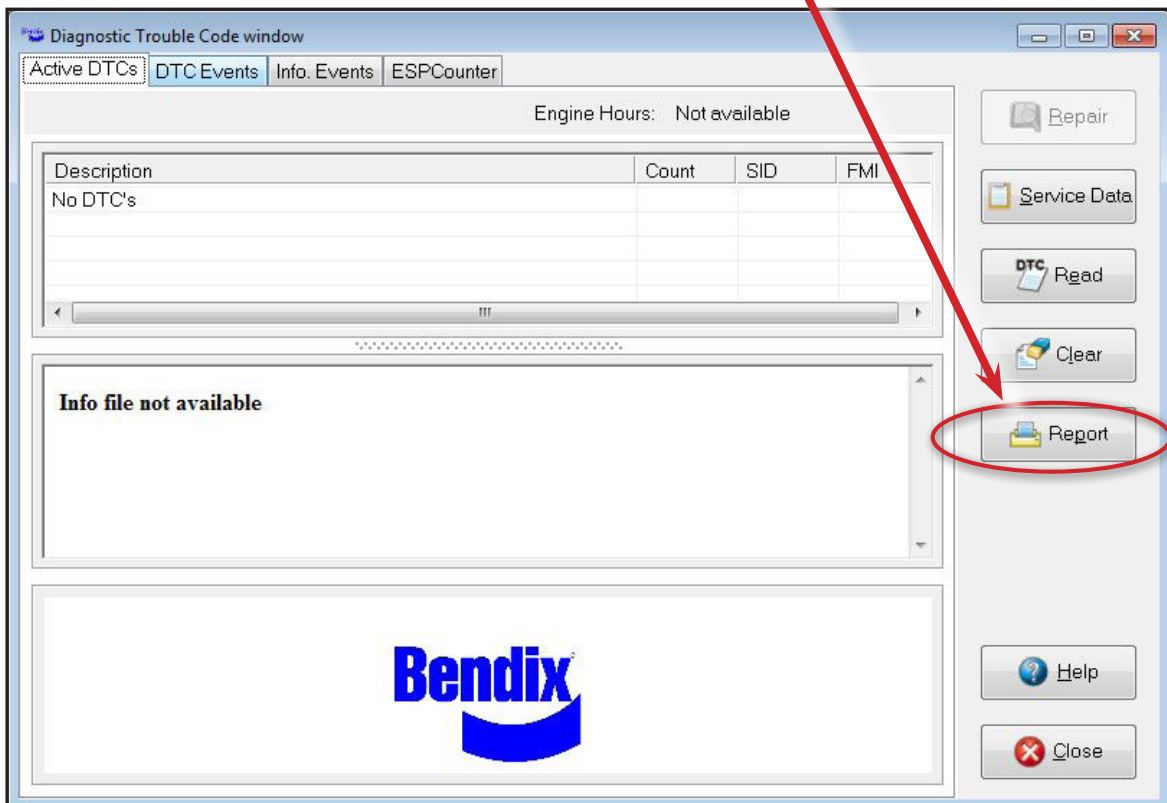
7. Click on the “DTCs” button.



Using Bendix® ACom® Software to Create Reports

Creating Reports, continued

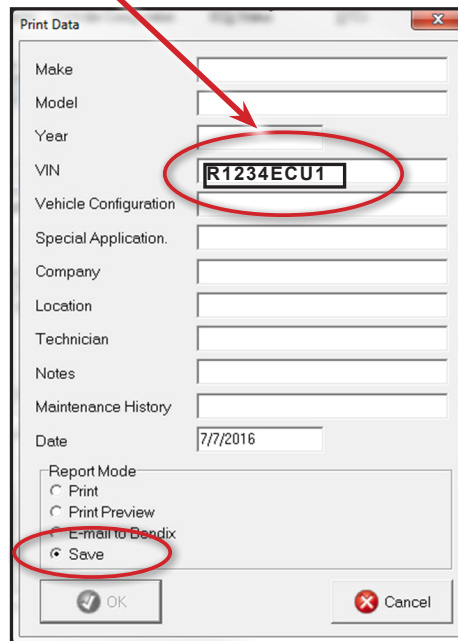
8. Create a report by selecting the "Report" button.



Using Bendix® ACom® Software to Create Reports

Creating Reports, continued

9. In the “VIN” location on the Print Data screen, enter the unit number plus ECU1 or WM1 (i.e. R1234ECU1 or R1234WM1). Note there is no space or dash between the unit number and ECU1 or WM1.

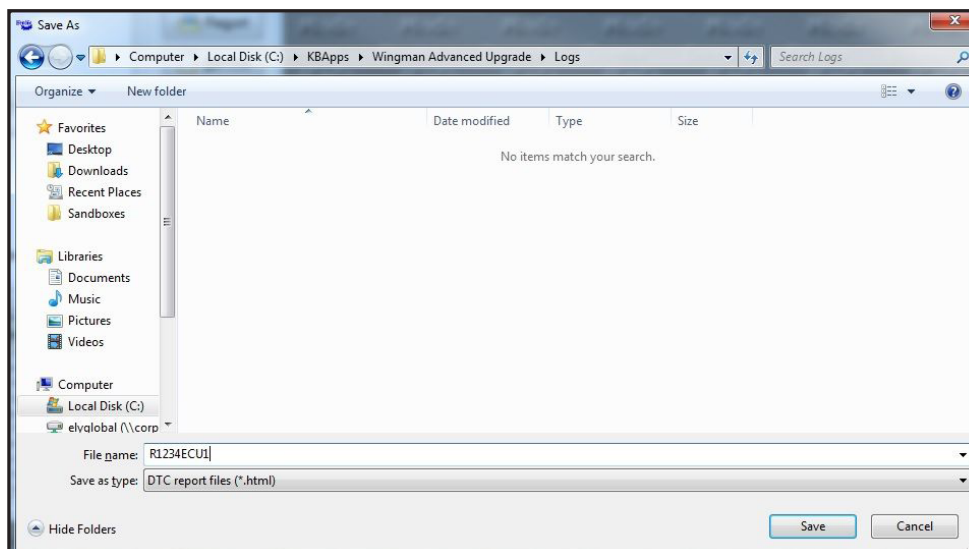


The screenshot shows the 'Print Data' dialog box with the following fields and options:

- Make: []
- Model: []
- Year: []
- VIN: **R1234ECU1**
- Vehicle Configuration: []
- Special Application: []
- Company: []
- Location: []
- Technician: []
- Notes: []
- Maintenance History: []
- Date: 7/7/2016
- Report Mode:
 - Print
 - Print Preview
 - E-mail to Bendix
 - Save

Buttons: OK, Cancel

10. Finally, select “Save,” then click on the “OK” button.
Save files to C:\KBApps\Wingman Advanced Upgrade\Logs.





Identify An Existing Radar

Identify an Existing Radar

Locating the Radar on the Vehicle

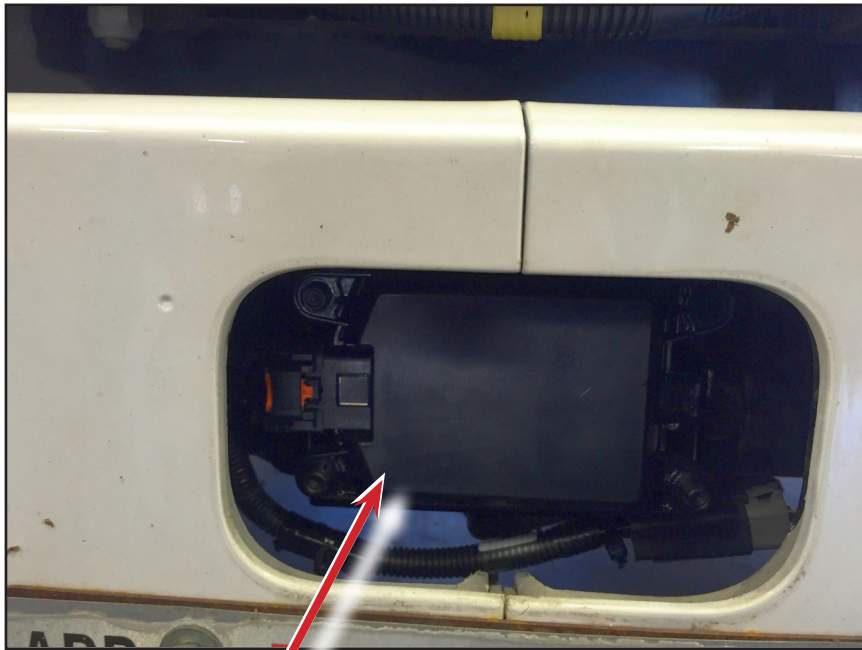


Bendix™ FLR10™ Radar Shown

If the vehicle has a Bendix™ FLR10™ radar, go to Step 17 of the *Bendix® Wingman® Advanced™ Upgrade Checklist*.

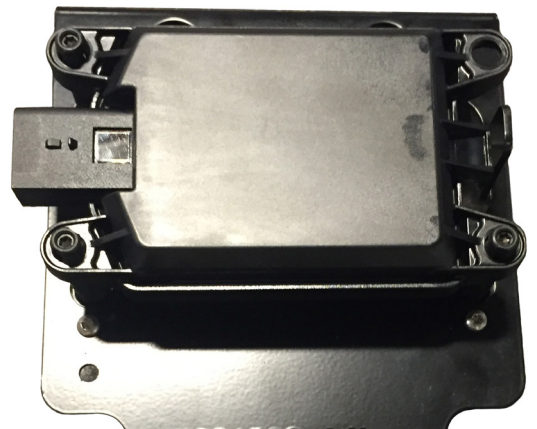
Identify an Existing Radar

Locating the Radar on the Vehicle, continued



Bendix™ FLR20™ Radar Shown

If the vehicle has a Bendix™ FLR20™ radar, go to Step 36 of the *Bendix® Wingman® Advanced™ Upgrade Checklist*.



Bendix™ FLR20™ Radar



E

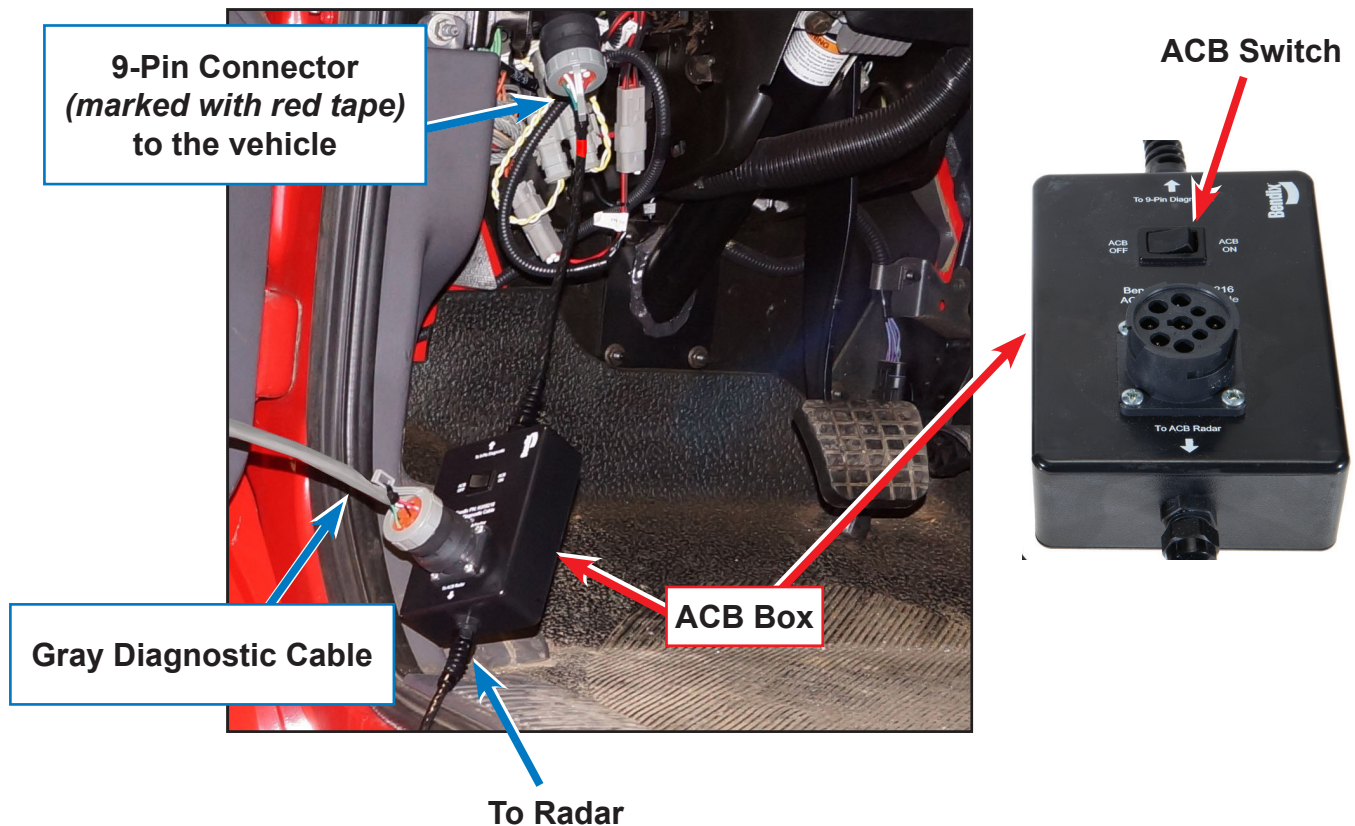
Bendix™ FLR10™ Radar Software Upgrade



Bendix™ FLR10™ Radar Software Upgrade

Connecting the Bendix® Wingman® ACB Diagnostic Cable to the Vehicle

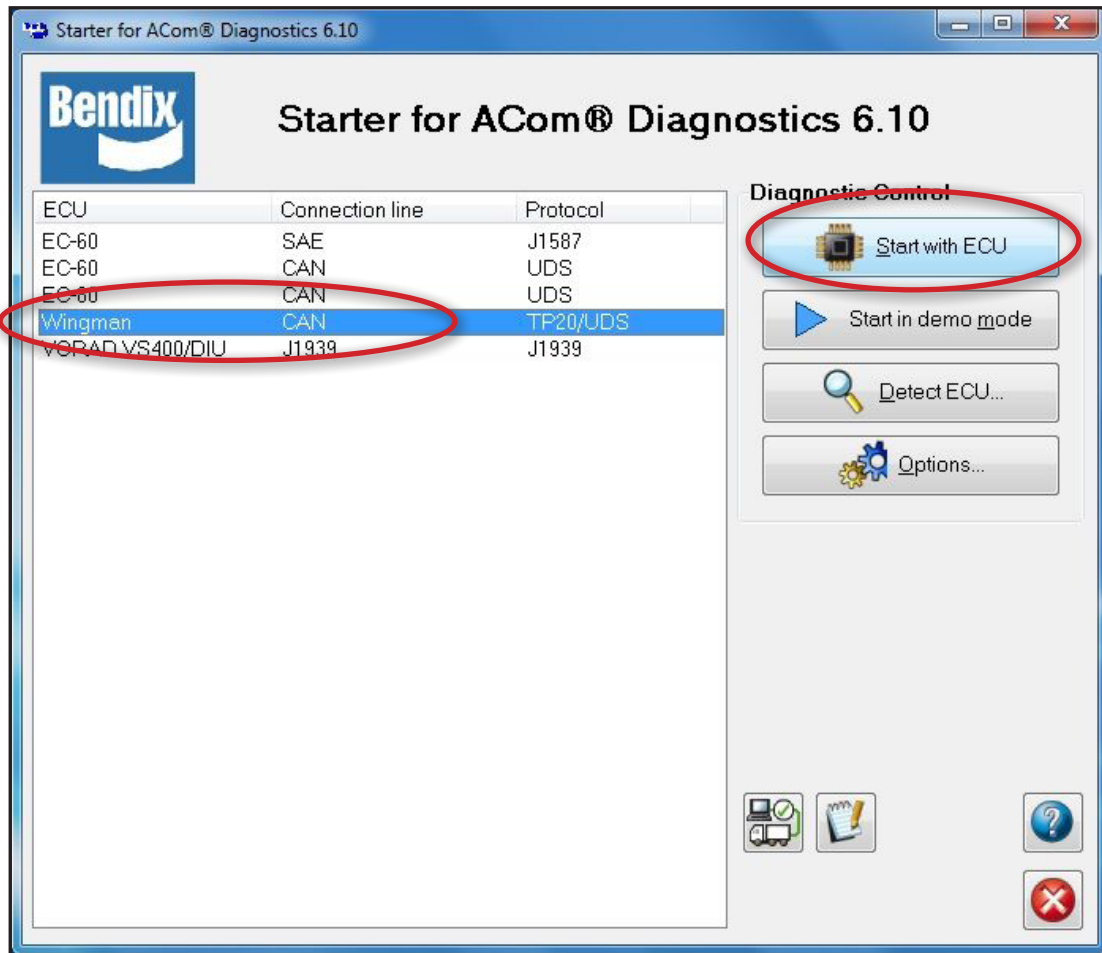
1. Turn the ignition key to the “OFF” position.
2. Remove the Bendix® Wingman® ACB box (with attached cables) from the utility case. Make sure the switch on the ACB box is in the “ACB OFF” position.
3. Disconnect the gray diagnostic cable from the vehicle and connect it to the front of the Bendix® Wingman® ACB box. Connect the ACB box 9-pin cable (marked with red tape) to the cab’s 9-pin diagnostic port.
4. Route the ACB box radar cable along the driver-side fender to the radar.
5. Unplug the connector from the FLR10 radar. Connect the ACB box connector to the FLR10 radar.
6. Turn the switch on the ACB box to the “ACB ON” position. Turn the ignition key to “ON.”



Bendix™ FLR10™ Radar Software Upgrade

Starting Bendix® ACom® for a Radar Sensor Update

1. Turn the ignition “ON.”
2. Start the ACom software program. Double-click the “Bendix ACom Diagnostics” icon.
3. Ensure the laptop is plugged in to an electrical outlet before the downloading process.
4. Highlight and select “Wingman” from the ACom menu.
5. Click the “Start with ECU” button.



Bendix™ FLR10™ Radar Software Upgrade

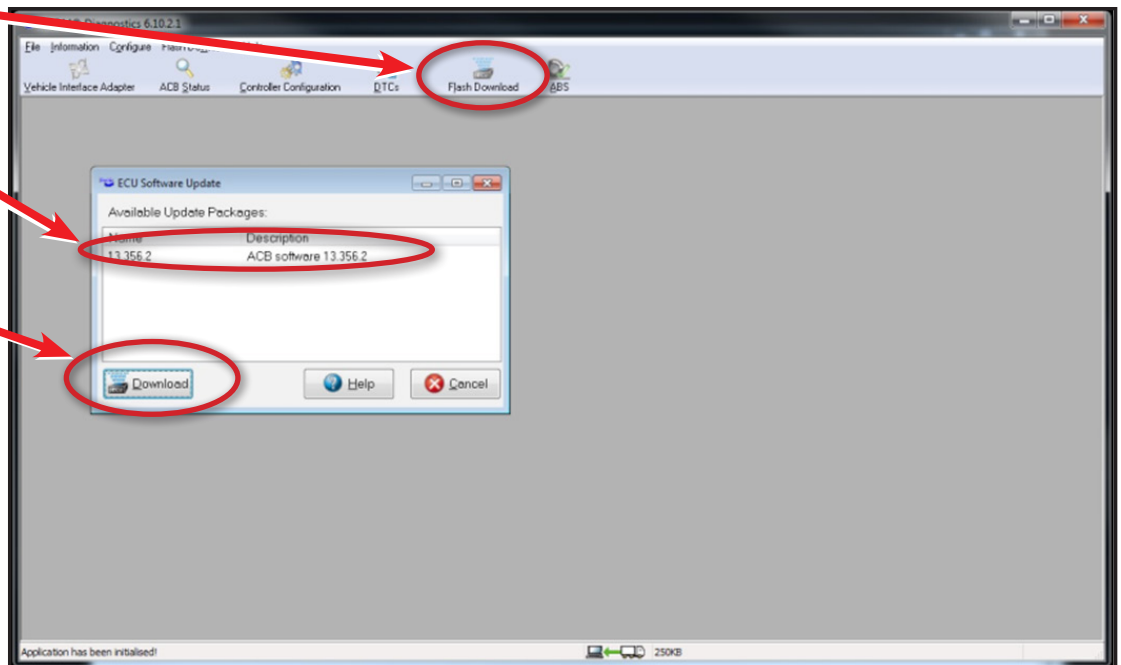
Updating the Radar Sensor Software

1. Select the “Flash Download” icon from the top menu.
2. Select the “ACB software 13.356.2” from the “ECU Software Update” window.
3. Select the “Download” button.

Step 1

Step 2

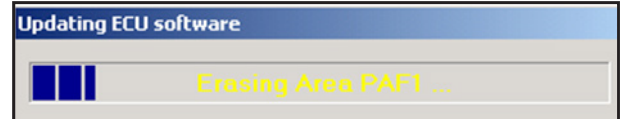
Step 3



Bendix™ FLR10™ Radar Software Upgrade

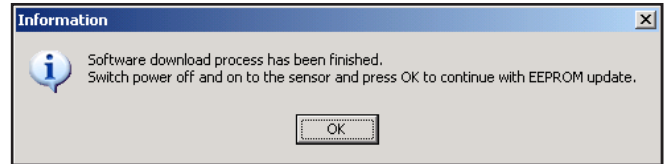
Updating the Radar Sensor Software, continued

4. A progress bar is displayed.
(Expect 10-20 minutes)

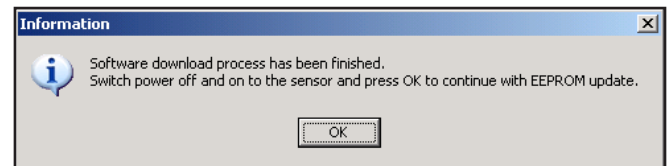


5. If you receive an error message like, “unknown error” and the download failed, use the following steps to correct the problem:
 - a. Restart the Bendix® ACom® software program. Close all open screens.
 - b. Power cycle the vehicle (key OFF, then ON to ignition).
 - c. Turn the switch on the Bendix® Wingman® ACB box to “ACB OFF”, then to “ACB ON.”
 - d. Restart the download from Step 2 of the “Updating Radar Sensor Software.”

6. When the “Information” window pops up on the screen, you must **STOP!**
DO NOT CLICK “OK.” Follow the dialog box instructions. If “OK” is clicked in error, go back to Step 1 and repeat Steps 1–6.



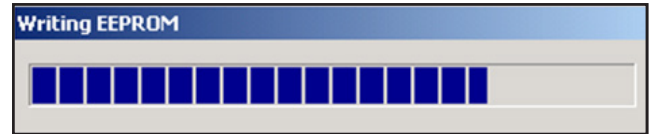
7. Before clicking “OK” do the following:
 - a. Turn the download cable switch to “ACB OFF,” then to “ACB ON.”
 - b. Click on “OK” on the “Information” window to continue.



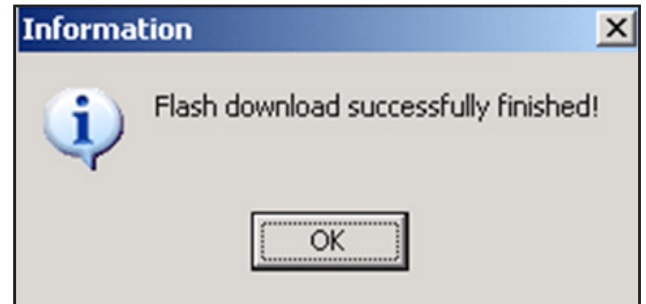
Bendix™ FLR10™ Radar Software Upgrade

Updating the Radar Sensor Software, continued

8. The “Writing EEPROM” status bar will appear for approximately 30 seconds.



9. When complete, an “Information” window will appear informing you that “Flash download successfully finished!”



10. Click “OK” to close the Bendix® ACom® program.



F

Programming Vehicle Software



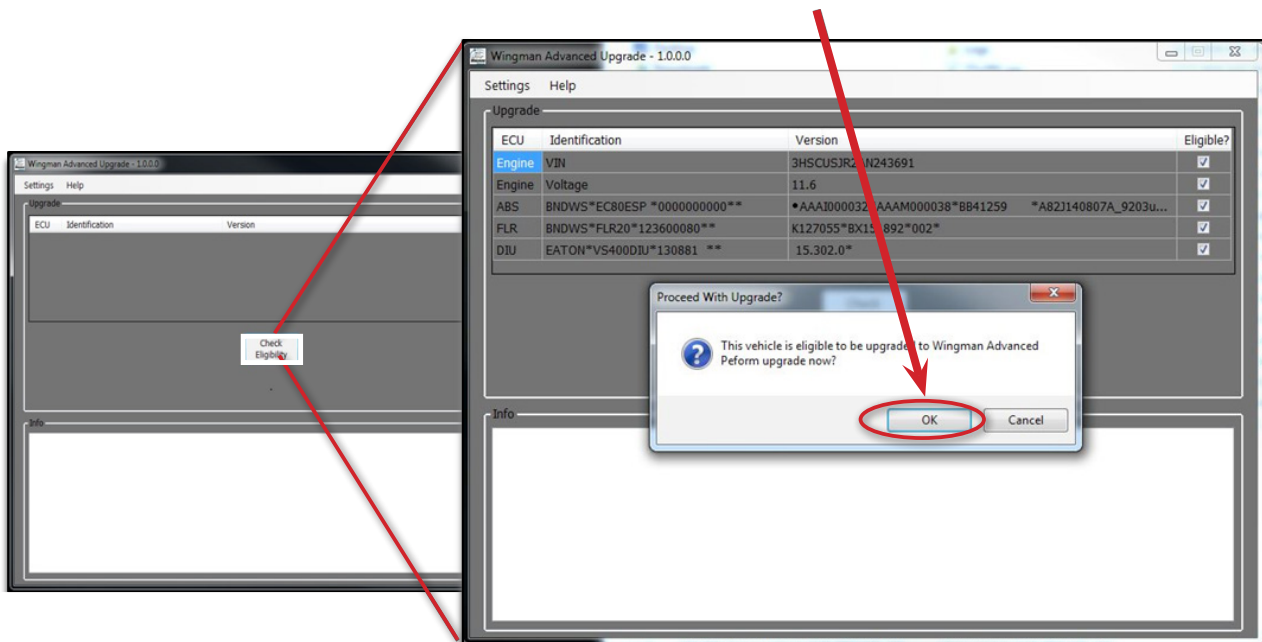
Programming Vehicle Software

Updating Vehicle Software

1. Select the “Wingman® Advanced™” icon on the computer.



2. Click the “Check Eligibility” button, then click “OK.”



Programming Vehicle Software

Updating Vehicle Software, continued

3. If prompted, connect the yaw rate sensor according to these steps:
 - a. Locate the yaw rate sensor on the vehicle. This sensor is usually on the frame rail near the center of the vehicle. Note: locations vary by OEM and model year of the vehicle.
 - b. Disconnect the vehicle yaw rate sensor cable.
 - c. Connect the yaw rate sensor diagnostic cable (from the utility case) to the vehicle's yaw rate wiring harness.
 - d. Verify the computer is plugged in to an electrical outlet before starting the download process.



Potential Yaw Rate Sensor Frame Rail Locations

Yaw Rate Sensor
Connector (2-Pin)

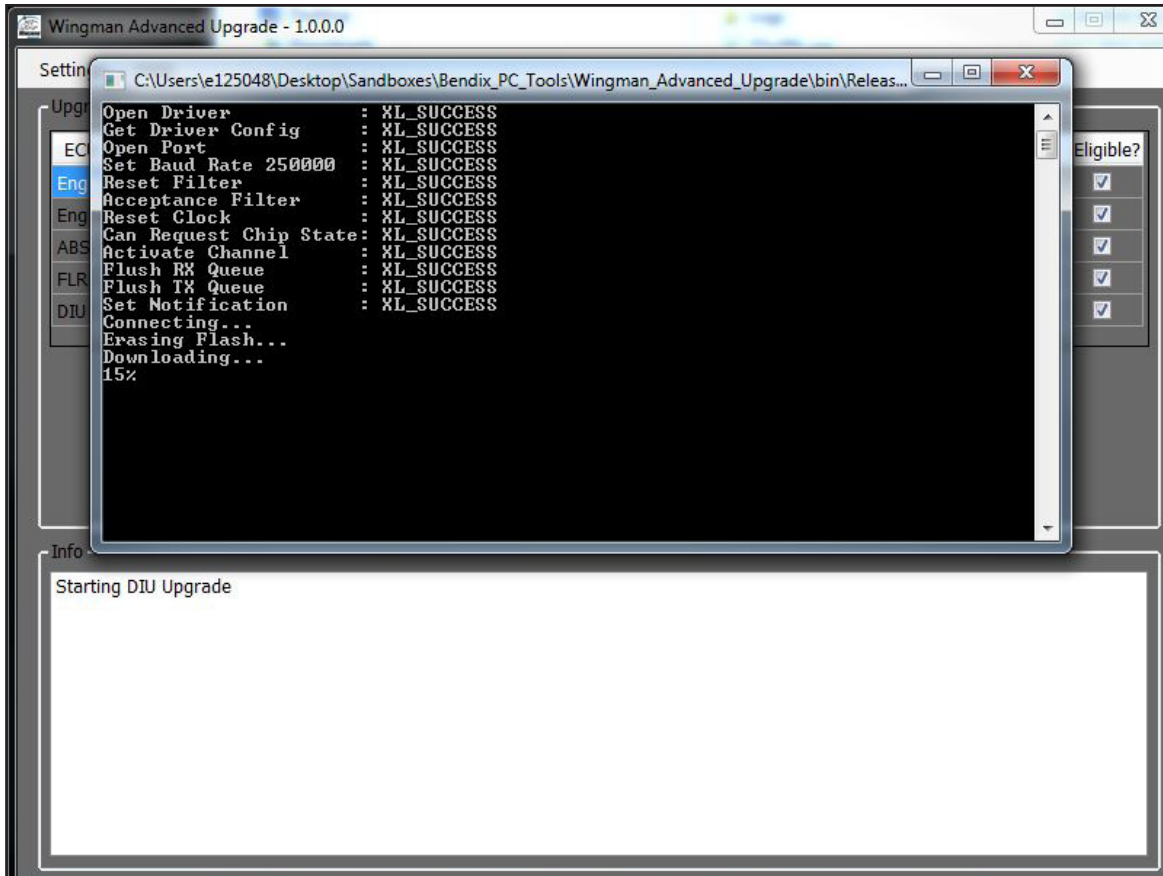


Yaw Rate Sensor Cable

Programming Vehicle Software

Updating Vehicle Software, continued

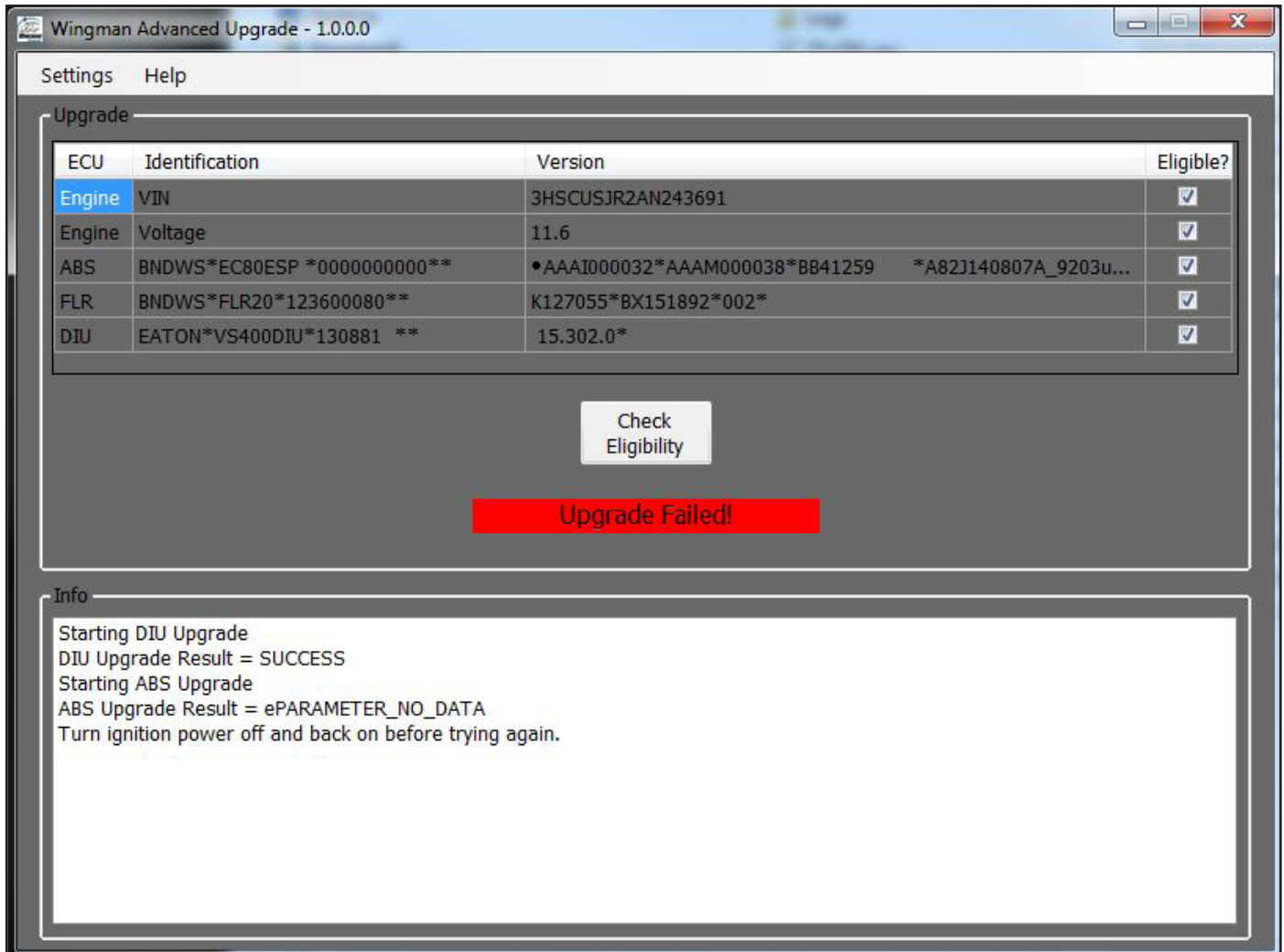
4. Upgrade program running.



Programming Vehicle Software

Updating Vehicle Software, continued

5. If an “Upgrade Failed” message appears (as shown in the illustration below), repeat the process starting from Step 1 of this section.



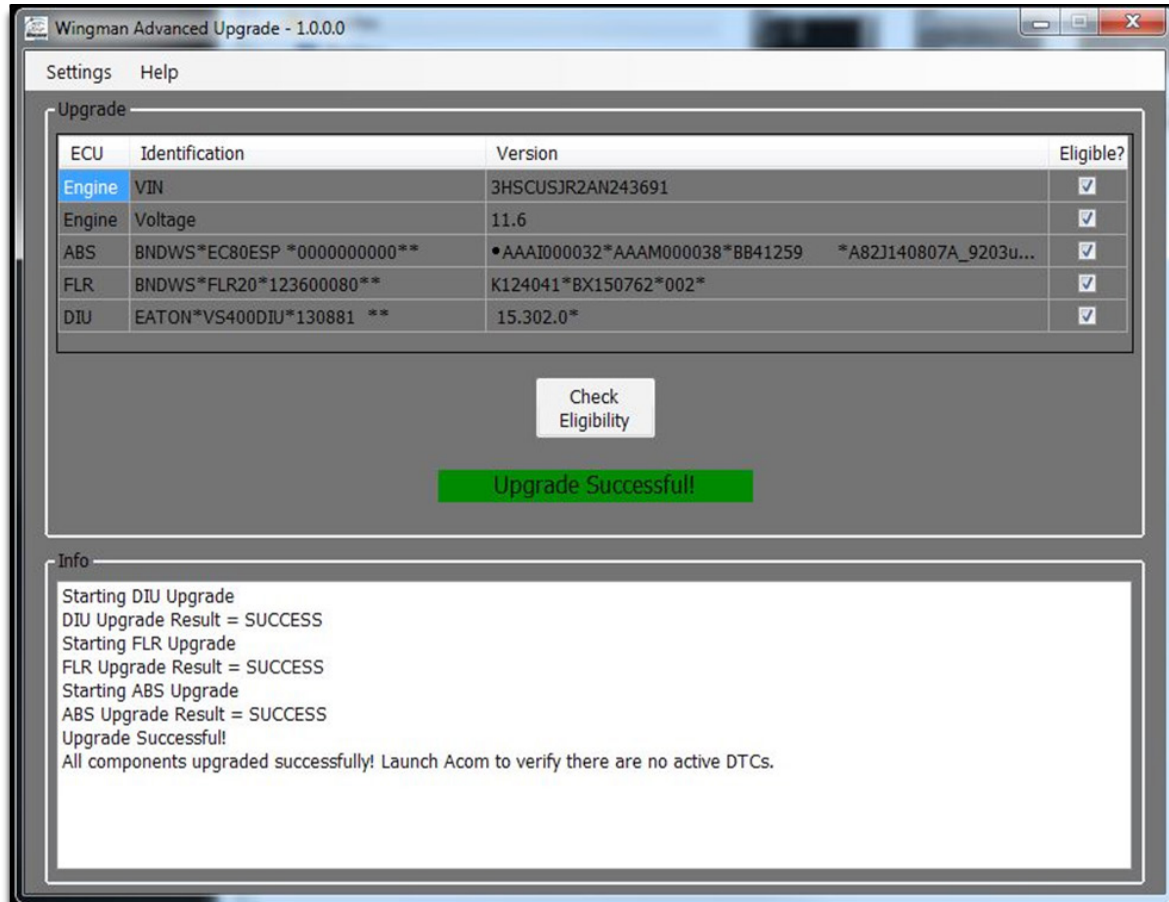
G

Saving a Successful Download



Saving a Successful Download

Successful Upgrade Example



1. When notified of a successful download: turn the ignition key “OFF,” remove the yaw rate sensor cable, and reconnect the vehicle’s connector/cable to the yaw rate sensor. Turn the ignition key “ON.”
2. After a successful upgrade, run the **Bendix® ACom® diagnostic software report for the Bendix® EC-60™ and Bendix® Wingman®** system and verify there are no new Diagnostic Trouble Codes (DTCs).
3. Repeat Section C. Save the reports with the unit number plus ECU2 or WM2 (i.e. R1234ECU2 or R1234WM2).
4. Coil and return the cables to the utility case.





Vehicle Power-Up Self-Test



Vehicle Power-Up Self-Test

POWER-UP SELF-TEST

This is a self-diagnostic check to determine if the system operation is normal.

1. Park the vehicle. Turn the ignition to “OFF.”
2. Turn the key to the “ignition power” position.
3. Toggle the cruise control switch at least once, and leave it in the “ON” position.
4. Start the vehicle, but do not drive the vehicle away.

Note: If the cruise control is in the “OFF” position, or if the vehicle is moving, this test will not run.

The self-test will start after 15 seconds and takes approximately five (5) seconds to complete.

Note that other vehicle system self-tests—e.g. the Bendix® ABS “chuff” test—may run during the initial 15 seconds after ignition is turned “ON.”

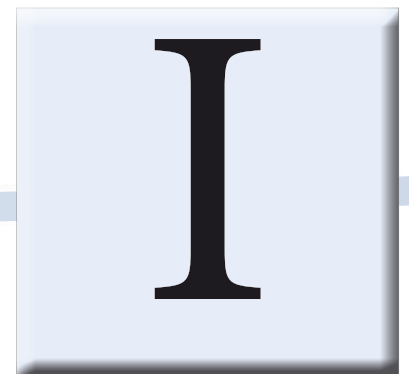
As the Bendix® Wingman® Advanced™ system self-test runs, the driver should hear a short set of beeps. The test checks the engine, transmission, and brake systems to make sure they are communicating. In addition—depending on the vehicle—the test may briefly display a distance alert message and/or cause the “Forward Vehicle Detected” icon in the instrument cluster to illuminate; this is normal.

If no problem is found and the test **passed**, no additional beeps/lamps will be displayed. Additionally, no trouble codes will be set.

If the system located an issue that will prevent it from functioning properly, a long warning beep will sound to alert the driver, and a DTC will be logged in the system (typically with a “status indicator/dash” icon illuminated). For descriptions of all DTCs, refer to the Bendix Service Data sheets. Service Data sheets are available on the computer desktop.

Description	Service Data Sheet Number
Bendix® Wingman® Advanced™ (FLR10™ Sensor)	SD-61-4962
Bendix Wingman Advanced System (FLR20™ Sensor)	SD-61-4960
Bendix® EC-60™ ABS / ATC / ESP Controllers (Advanced)	SD-13-4869
Bendix® ESP® EC-80™ Controller	SD-13-4986





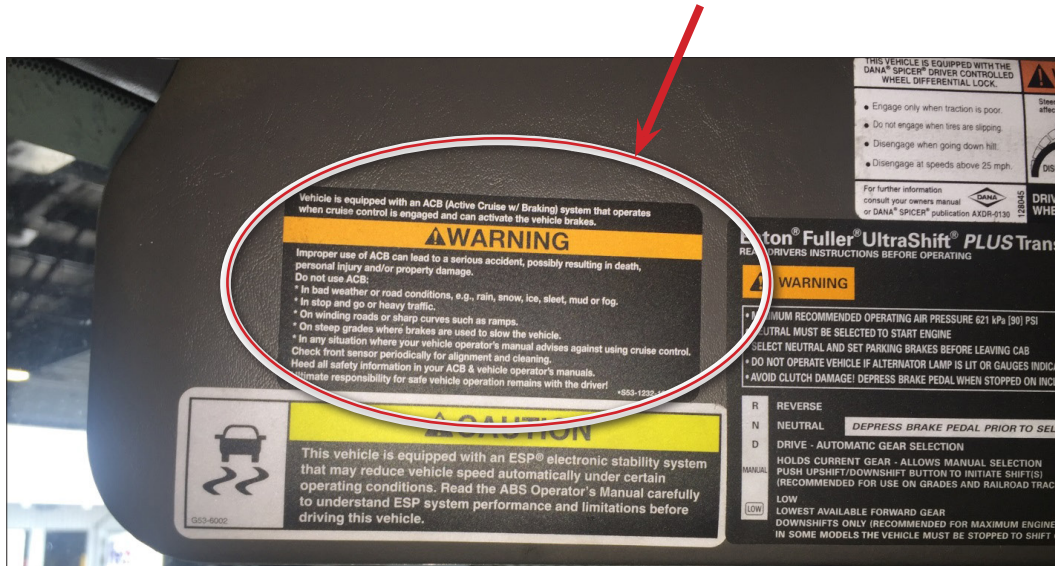
Visor Sticker & Operator's Manual Locations



Visor Sticker & Operator's Manual Locations

Operator Manual and Sticker Location

If present, remove the existing Bendix® Wingman® ACB sticker on the vehicle's visor.



Place the new Bendix® Wingman® Advanced™ safety system sticker on the visor. This sticker, and the Operator's Manual, are included in the documentation kit and is available from FedEx (*part number 0033182*) or Bendix (*part number K139420*).



This vehicle is equipped with a safety system that may activate the vehicle brakes at any time to help mitigate a rollover, jackknife or forward collision — independent of cruise control.

! WARNING

- This system should not be relied upon to stop the vehicle.
- Heed all proper driving practices and safety information in your vehicle Operator's Manual(s).
- For optimal system performance, keep the radar sensor clean and aligned, and the brake system properly maintained.
- Improper use of this system can lead to a serious accident.

Ultimate responsibility for safe vehicle operation remains with the driver!

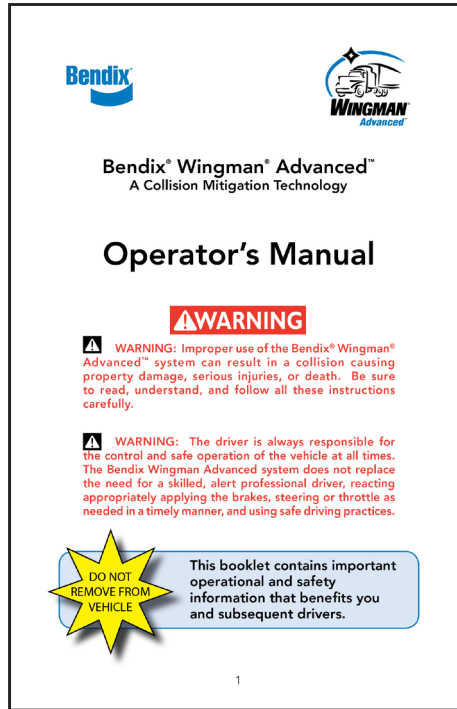
Read the latest
Operator's Manual
(BW2850)
- Go to -
www.bendix.com

K056787 ©2011 Bendix Commercial Vehicle Systems LLC 02/11. All Rights Reserved.



Visor Sticker & Operator's Manual Locations

When finished with the upgrade, carefully read the Operator's Manual. Place the manual in the vehicle's glove box for future use.



Document Number BW2850

The Operator's Manual is included in the documentation kit.
The documentation kit is available from FedEx
(part no. 0033182) or Bendix (part no. K139420).

After sections G, H, and I are complete—and no DTCs faults are indicated—the Bendix® Wingman® Advanced™ upgrade is complete and tested. The vehicle can be placed back into service.

