

# WABCO

## Technical Bulletin

### Bootloader and Application Software Update for the WABCO OnGuard® In-Cab Dash Display Unit

Applies to Part Numbers 400 871 800 0, 400 871 801 0 and 400 871 850 0

#### Hazard Alert Messages

Read and observe all Warning and Caution hazard alert messages in this publication. They provide information that can help prevent serious personal injury, damage to components, or both.

##### **WARNING**

To prevent serious eye injury, always wear safe eye protection when you perform vehicle maintenance or service.

Park the vehicle on a level surface. Block the wheels to prevent the vehicle from moving. Serious personal injury or damage to components can result.

##### **WARNING**

OnGuard® is designed to create high vehicle deceleration (without driver intervention) in certain situations. To reduce the risk of injuries caused during OnGuard®-activated vehicle deceleration, all vehicle occupants should be correctly seated and properly belted or restrained during vehicle operation. All loose items should be secured so that they will not fly forward and cause injury during a deceleration event. The use of OnGuard® in vehicles not equipped with seat belts may expose non-belted passengers to injuries due to system initiated sudden vehicle deceleration, despite vehicle compliance with applicable safety standards.

#### How to Obtain Additional Maintenance, Service and Product Information

If you have any questions regarding the material covered in this bulletin, or for more information about the WABCO product line, please contact the WABCO Customer Care Center at 855-228-3203, by email at [wnacustomer@wabco-auto.com](mailto:wnacustomer@wabco-auto.com), or visit our website: [wabco-na.com](http://wabco-na.com).

#### Description and Function

OnGuard® is an Adaptive Cruise Control (ACC), Collision Warning System (CWS) and Collision Mitigation System (CMS). ACC is a radar-based tracking system that works in conjunction with standard cruise control to maintain the set cruise speed when no vehicle is being tracked and maintains a safe following distance when a lead vehicle is being tracked. The safe following distance is maintained by controlling engine torque, engine retarder and the foundation brakes, as necessary. This automatic brake application is intended only to provide early braking until the driver recognizes and reacts to the situation. The driver must also apply the brakes in response to the Collision Warning.

#### Bootloader and Application Software Update

Vehicles equipped with the WABCO OnGuard in-cab dash display, part numbers 400 871 800 0, 400 871 801 0 and 400 871 850 0, may require a bootloader and application software update to enhance the user interface functions of the display unit.

This update will restrict the time the bootloader mode function is active to 10 seconds. After 10 seconds, bootloader mode returns to the main application.

The purpose of this document is to provide instructions for updating the bootloader and application software for the WABCO in-cab dash display.

**NOTE:** Both the bootloader and application software must be updated to enable the OnGuard Collision Mitigation System.

##### **WARNING**

Please verify the vehicle baud rate before the start of this procedure. Choose the correct "Firmware file" according to the baud rate of your vehicle (250kBd or 500kBd).

**Note:** It is possible to load the incorrect file when updating the bootloader and application software.

Using the incorrect baud rate files will modify the WABCO in-cab dash display to the baud rate of the firmware that was selected.

This will make the display incompatible with the vehicle's J1939 CAN BUS network. If the incorrect files are used, the display will no longer be useable for that vehicle and will need to be replaced.

**Note:** Failure to follow these steps and install the correct software into the WABCO in-cab dash display will result in denial of warranty.

WABCO disclaims all liability for incorrect installation of this software update.

## Procedures

This procedure shows how to update the bootloader and application software for the WABCO OnGuard in-cab dash display unit. Please perform the steps in the following order as presented in this publication.

### Section 1: Software Installation

1. Download WABCO OnGuard In-Cab Dash Display Reflash Tool V1.07.
2. Install the WABCO OnGuard In-Cab Dash Display Reflash Tool V1.07.

### Section 2: Updating the Display

1. Run the Reflash Tool to update the bootloader software.
2. Run the Reflash Tool to update the application software.

### Section 3: Update Verification

Verify the bootloader update installation.

## Section 1: Software Installation

**NOTE:** Before installing the reflash tool, make sure you have the latest diagnostic interface adapter driver and firmware updates installed in your PC.

### Step 1 – Download the WABCO OnGuard In-Cab Dash Display Reflash Tool V1.07

1. Download the “WABCO OnGuard In-Cab Dash Display Reflash Tool V1.07” from the link below:  
<http://www.wabco-na.com>.
2. When the WABCO home page has loaded, cursor over to “Downloads”. From the drop-down menu, select “WABCO OnGuard In Cab Dash Display Reflash Tool V1.07”, and “save as” to a known location such as your desktop.

3. Once the zip file has been downloaded, double-click the zip file icon to open the file. There will be two items in the file, a copy of this Technical Publication and the “Wabco In-Cab Display Reflash Tool V1.07.exe”.
4. Double-click on the “Wabco In-Cab Display Reflash Tool V1.07.exe” to open the tool.

### Step 2 – Install the WABCO OnGuard In-Cab Display Reflash Tool V1.07

1. Click “Next” to install software. Follow the directions on the screen. Figure 1.

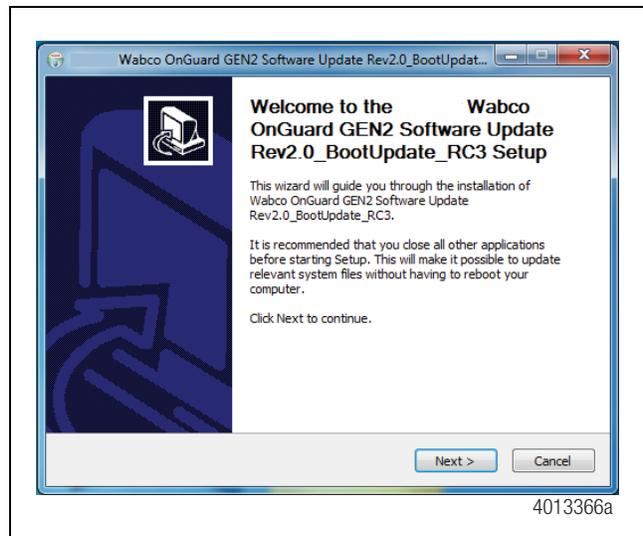


Figure 1

2. Click “Next”, or you may change the installation directory from the default if desired. Figure 2.

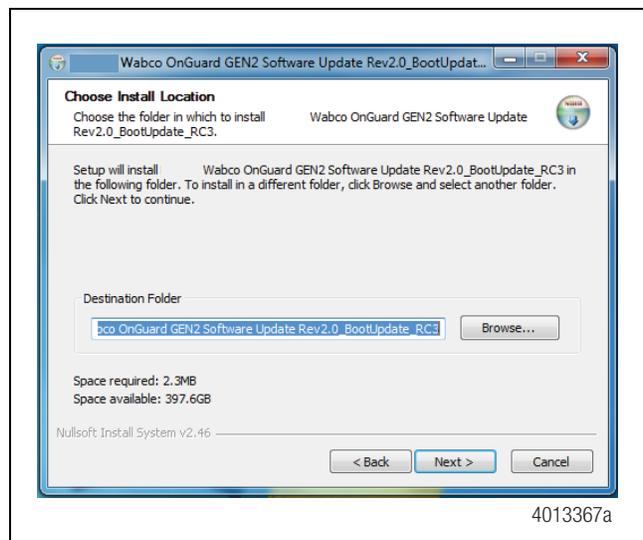
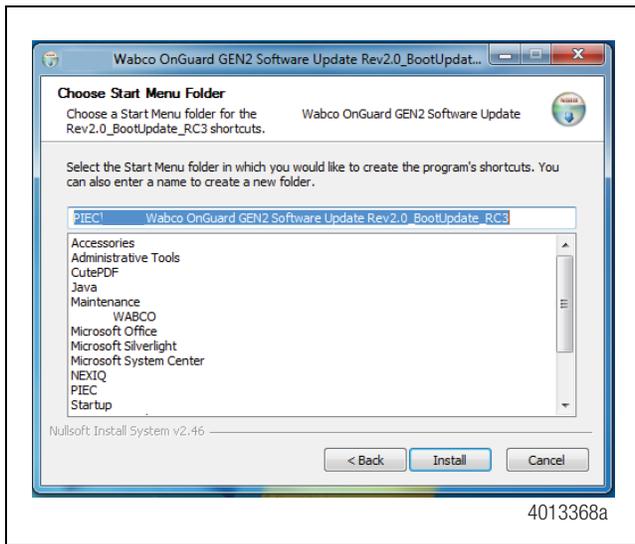


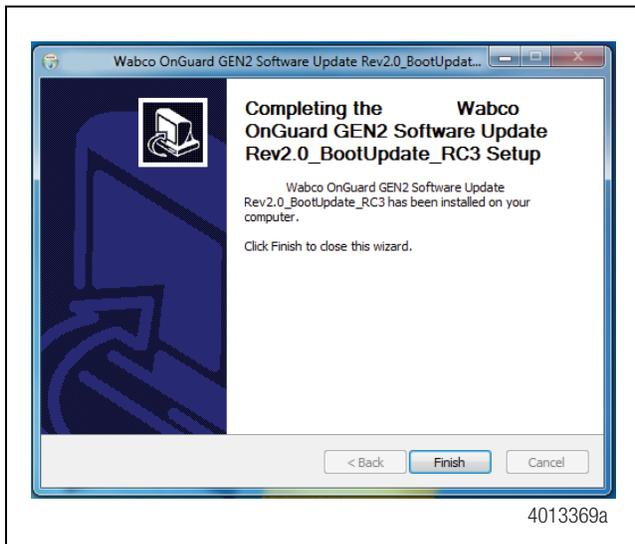
Figure 2

3. Click “Install”. Figure 3.



**Figure 3**

4. Click "Finish". Figure 4.

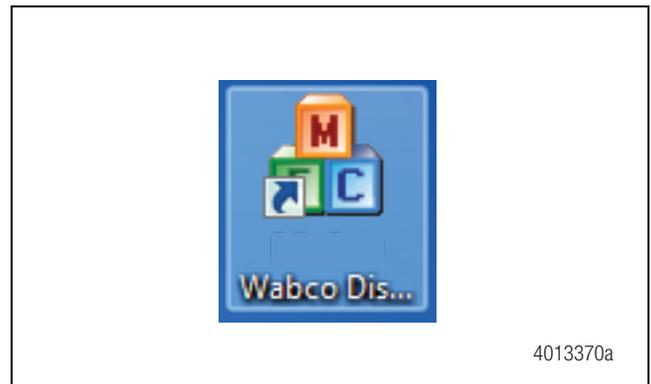


**Figure 4**

## Section 2: Updating the Display

### Step 1 – Run the Reflash Tool to Update the Bootloader Software

1. An icon should now be available on your desktop or you can find it under the PIEC folder in the Windows Start menu. To run the WABCO In-Cab Dash Display bootloader reflash Tool, double-click the "Wabco Display Reflash Tool.V 1.06" icon. Figure 5.



**Figure 5**

- The first time you run the reflash tool, you will need to select the correct options for the "Download Tool" (Interface Device) you are using. Use the pull-down menus to select the following:
  - "Vendor"
  - "Protocol"
  - "Device"

#### **⚠ WARNING**

Please verify the vehicle baud rate before you select the Firmware file name. Be sure to select the correct baud rate "Firmware file" for your vehicle (250kBd or 500kBd).

**Note:** It is possible to load the incorrect file when updating the "Bootloader software".

Using the incorrect baud rate file will modify the WABCO in-cab dash display to the baud rate of the firmware that was selected.

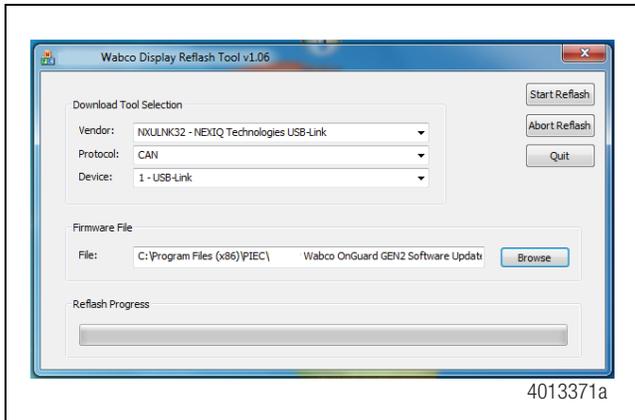
This will make the display incompatible with the vehicle's J1939 CAN BUS network. If the incorrect file is used, the display will no longer be useable for that vehicle and will need to be replaced.

**Note:** Failure to follow these steps and install the correct software into the WABCO in-cab dash display will result in denial of warranty.

**WABCO disclaims all liability for incorrect installation of this software update.**

- Click the browse Button and select the correct "Firmware file" name by double-clicking on the file. Figure 6.
  - For **250kBd** vehicles, select Firmware file:
    - SOFA0096510\_BootUpdate\_250K.Mot

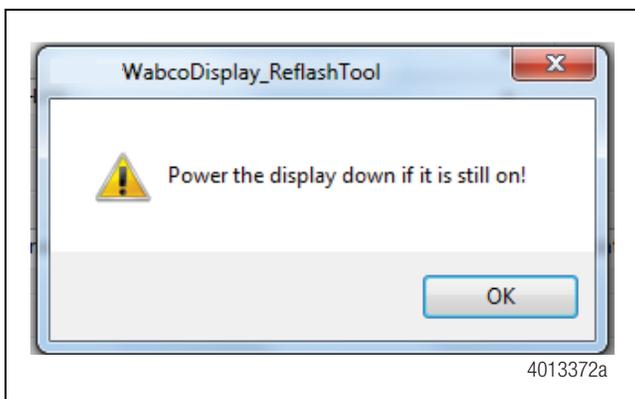
- For **500kBd** vehicles, select Firmware file:  
SOFA0096610\_BootUpdate\_500K.Mot



**Figure 6**

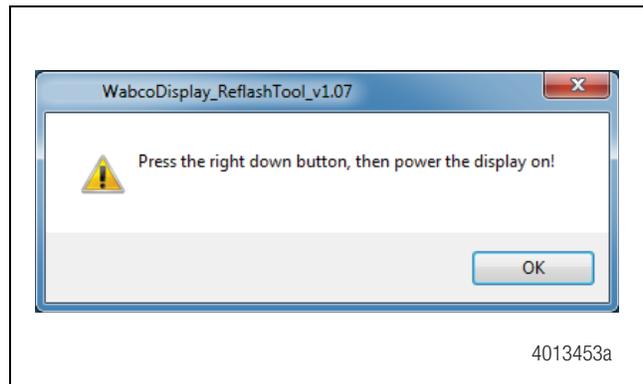
The next time you run the Reflash tool, confirm the selections are correct for the current vehicle. The options and software filename will be automatically initialized to the previous selections.

4. **Turn off the ignition.** The ignition must be off for the display to enter bootloader mode.
5. Click “Start Reflash” to begin the process.
  - You will see a reminder that the display unit must be turned off. Click “OK” to close the reminder window. Figure 7.



**Figure 7**

- You will see another reminder to hold down the right DOWN-ARROW button, then turn the vehicle ignition on. Click “OK” to close. Figure 8.



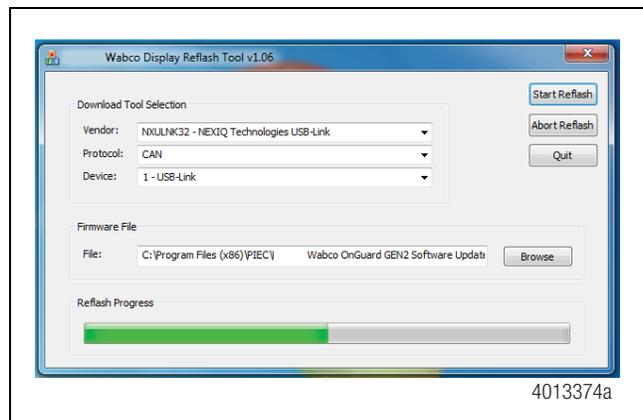
**Figure 8**

6. Hold down the right DOWN-ARROW button on WABCO in-cab dash display, while holding the button down, turn on the vehicle ignition. Once the display is in bootloader mode, the DOWN-ARROW button may be released.

**NOTE:** On 250kBd vehicles, the display screen will be dark when in “Bootloader” mode. Once the bootloader update has been completed, whenever the display is placed in bootloader mode again, the display screen will be blue with the message “Bootloader 250K”.

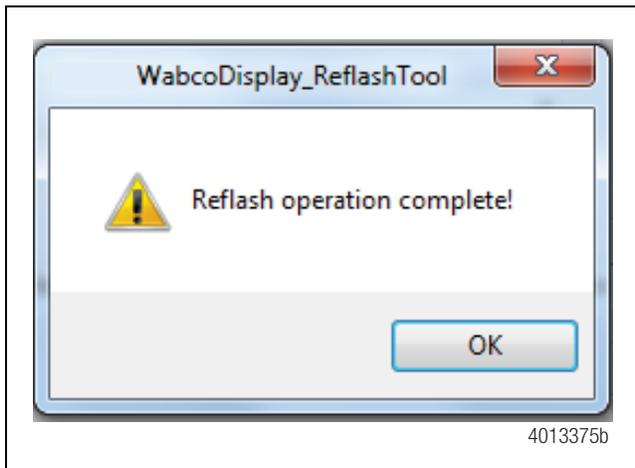
On 500kBd vehicles, the display screen will be blue with the message “Bootloader 500K” when in “Bootloader” mode, before and after the update. Only the version “V” number will change.

7. After a few seconds, the reflash operation will start. The status of the update may be monitored in the “Reflash Progress” bar. It will take less than a minute to complete. No errors should occur. Figure 9.



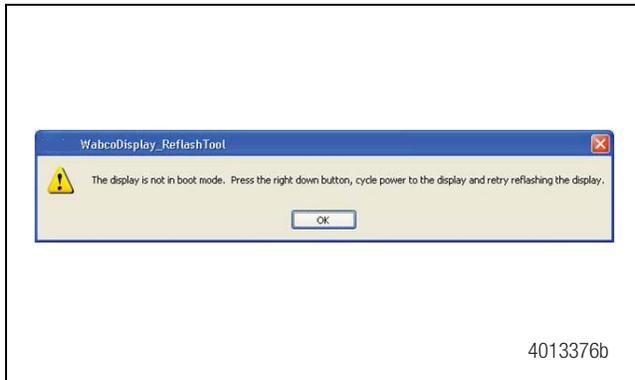
**Figure 9**

8. When the bootloader has been updated successfully, you will see the following message. Click “OK” to close the message. Figure 10.

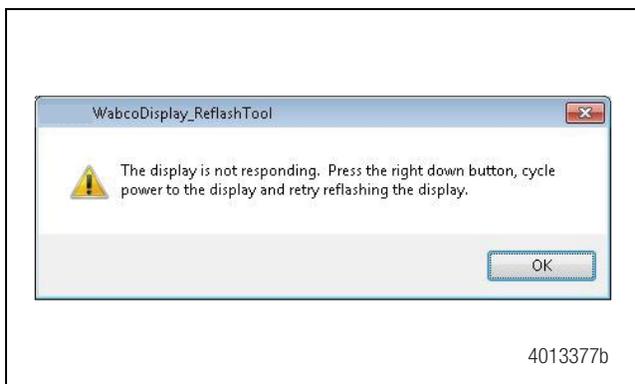


**Figure 10**

**NOTE:** It is possible for the reflash operation to fail with an error such as the following. Figure 11 and Figure 12.



**Figure 11**



**Figure 12**

This does NOT mean the display has failed; only that the reflash operation needs to be retried (including cycling power to the display). In this case, please repeat the Section 2: Step 1 set of instructions to retry the reflash process.

**NOTE:** Once the bootloader software is updated, the application software must be updated for the display to work in normal mode. If only the bootloader software is updated, the display will only be in bootloader mode and OnGuard™ will remain disabled until you update the application software. In order for OnGuard™ to be enabled, both the bootloader and application software must be updated in the same order as in this publication.

## Step 2 – Run the Reflash Tool to Update the Application Software

After updating the bootloader firmware, the display will stay in bootloader mode until the application firmware is updated. The ignition does not need to be turned off to update the application firmware.

1. Use the tool's pull-down selections to select/verify the following options for the "Download Tool" (Interface Device):
  - "Vendor"
  - "Protocol"
  - "Device"

### **! WARNING**

Please verify the vehicle baud rate before you select the Firmware file name. Be sure to select the correct baud rate "Firmware file" for your vehicle (250kBd or 500kBd).

**Note:** It is possible to load the incorrect file when updating the "application software".

Using the incorrect baud rate file will modify the WABCO in-cab dash display to the baud rate of the firmware that was selected.

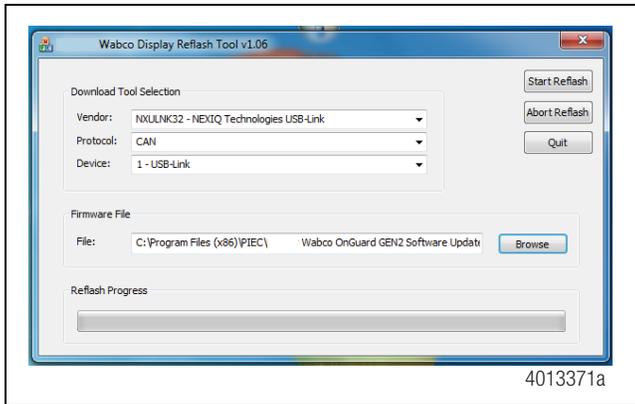
This will make the display incompatible with the vehicle's J1939 CAN BUS network. If the incorrect file is used, the display will no longer be useable for that vehicle and will need to be replaced.

**Note:** Failure to follow these steps and verify/install the correct software into the WABCO in-cab dash display will result in denial of warranty.

### WABCO disclaims all liability for incorrect installation of this software update.

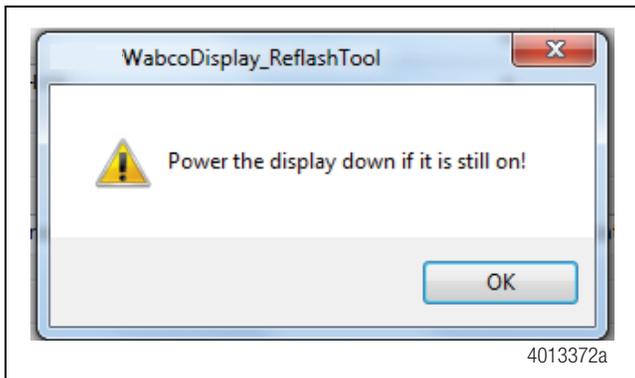
2. Click the browse Button and select the correct "Firmware file" name by double-clicking on the file. Figure 13.
  - For **250kBd** vehicles, select Firmware file:
    - SOF00086220.Mot

- For **500kBd** vehicles, select Firmware file:  
SOF00089820.Mot



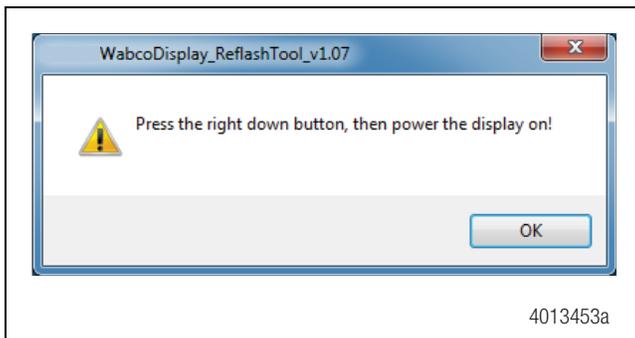
**Figure 13**

3. Turn off the ignition. The ignition must be off for the display to enter bootloader mode.
4. Click “Start Reflash” to begin the process.
  - The following reminder will be shown indicating that the display unit must be turned off. Click “OK” to close the reminder window. Figure 14.



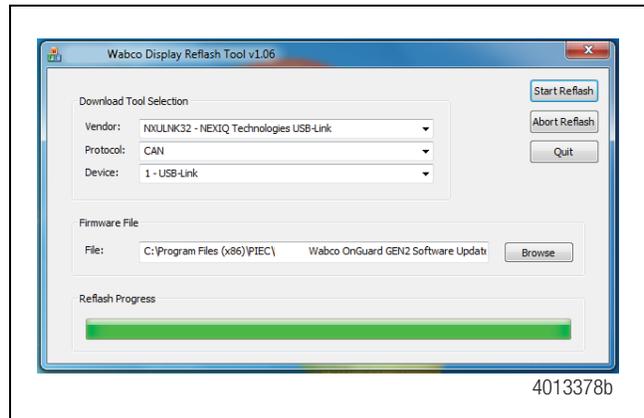
**Figure 14**

- Another reminder will be shown to hold down the right DOWN-ARROW button and then turn on the vehicle ignition on. Click “OK” to close. Figure 15.



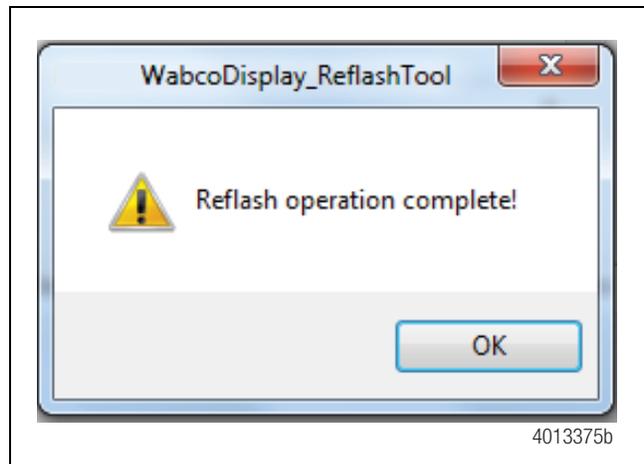
**Figure 15**

5. Hold down the right DOWN-ARROW button on WABCO in-cab dash display, while holding the button down, turn on the vehicle ignition. Once the display is in bootloader mode, the DOWN-ARROW button may be released.
6. After a few seconds, the reflash operation will start. The status of the update may be monitored in the “Reflash Progress” bar. It will take less than a minute to complete. No errors should occur. Figure 16.



**Figure 16**

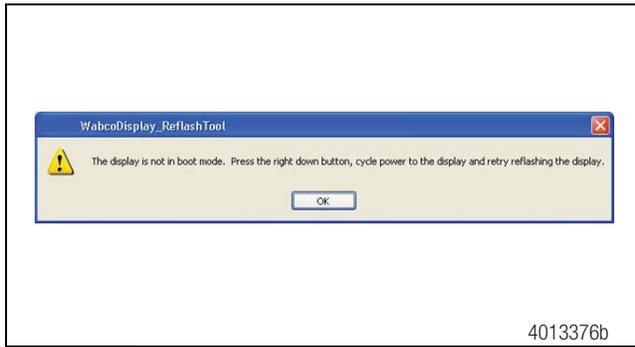
7. When the application software has been updated successfully, the following message will be displayed. Click “OK” to close the message. Figure 17.



**Figure 17**

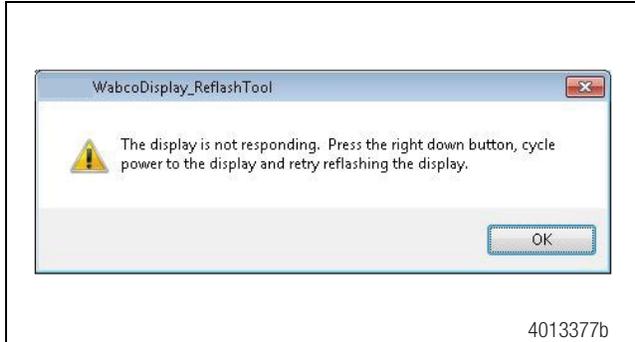
8. Click “Quit” to exit.

**NOTE:** It is possible for the reflash operation to fail with an error such as the following: Figure 18 and Figure 19.



**Figure 18**

4013376b



**Figure 19**

4013377b

This does NOT mean the display has failed; only that the reflash operation needs to be retried, including cycling power to the display. In this case, please follow the Section 2: Step 2 set of instructions to retry the reflash process.

## Section 3: Update Verification

### Verify the Bootloader Update Installation

1. Turn off the ignition.
2. Press the right DOWN-ARROW button and turn on the ignition. The display should be in bootloader mode.
3. Verify the bootloader software version on the screen.

For 250kBd Version –“BOOTLOADER 250K V1.05”. Refer to Figure 20.



**Figure 20**

4013388a

For 500kBd Version –“BOOTLOADER 500K V1.05”. Refer to Figure 21.



**Figure 21**

4013389a

**Note:** Failure to install the correct software into the WABCO in-cab dash display will result in denial of warranty.

**WABCO disclaims all liability for incorrect installation of this software update.**

4. After 10 seconds, the main application software starts and OnGuard™ functionality is enabled.

# **WABCO**

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