



Instructions

Altec Service Tool Update

This work instruction is to assist technicians to update the computer firmware on AH75/85/100 units associated with CSN 592 Harness Replacement. Technicians should have a working understanding of computers, have access to the Altec Service Tool (part number 970307148), and an internet connection to www.altec.com. The procedure consists of four sections. Read and understand all steps of the instructions before beginning the procedure.

Preparation

When performing the update, all calibration settings will be lost. **Record all initial calibration settings for each electronic control module (ECM) BEFORE updating the unit.** Re-enter the original calibration settings after the update is completed.

Updating Computer Software

Computer System Update

1. Check the laptop to be sure Altec Service Tool software is installed on it. Look at ALL programs under the Start Menu to see if the Altec Service Tools folder is shown. If it is not shown, install it using the guide 074930187 and flash drive that came with the Altec Service Tool Kit.
2. Download the Service Update, 970549186, from <http://www.altec.com/service/technical-information>.
3. Install the Service Tool update by double clicking the downloaded file. This is the same process (shown in 074930187) as the initial install. Open the Altec_Motoservice_Tool_Update.exe file, and double click to install. If the system is up to date, it will give the option to Uninstall. Do not Uninstall.
4. After making sure the software and update are installed on the laptop, move on to the ECM Connection section.

Connecting the Computer and ECM

ECM Connection

1. The CAN/USB interface assembly is a cable with USB and CAN connections (refer to Figure 1). Connect the USB end of the interface assembly to the computer. Then connect to the turntable ECM by connecting the CAN connector to the cable at the rear of the turntable. The turntable cable will be capped. Make sure that both the turntable and platform ECMs are both active before continuing the update by checking to see that the upper display is on. Push the Start/Stop at the platform to activate if it is not.
2. Connect the Service Tool security key (refer to Figure 2) to a USB port on the laptop computer. Continue to next section.

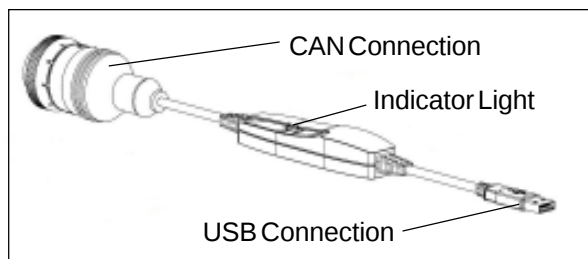


Figure 1 — CAN/USB Interface Assembly

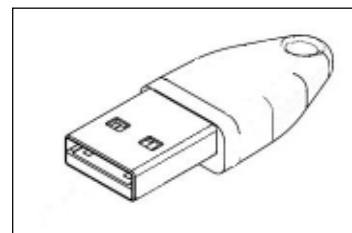


Figure 2 — Security Key

Recording the Original Settings

Recording Original Calibration Settings

1. Make sure the CAN/USB interface assembly is connecting the computer and the ECM by checking the indicator light on the CAN/USB cable. The power light should be steadily lit. Open the Altec Motoviewer. This can usually be done by going to Start Menu->All Programs->Altec Service Tools->Altec MotoViewer (refer to Figure 3).
2. When the Altec MotoViewer opens, select File->Open. A small screen should open. Select the Turntable_Calibration_AH_v0_06 and click on Open (refer to Figure 4)



Figure 3 — Altec MotoViewer Access

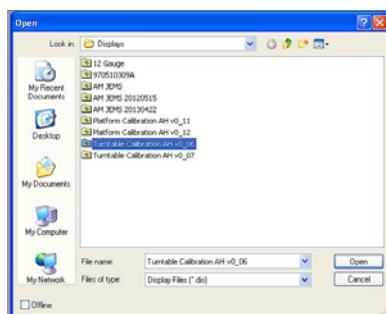


Figure 4 — MotoViewer File Open

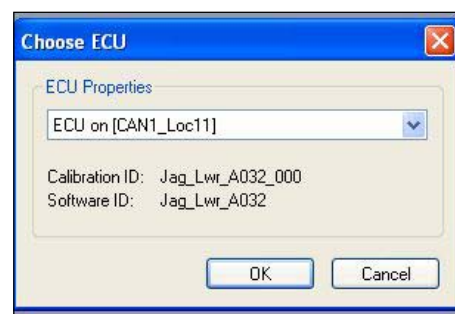


Figure 5 — Choose ECM

3. Since the unit is fully awake (both turntable and platform ECMs are awake), a screen will open asking for a location to which to connect (refer to Figure 5). The turntable ECM location is shown as CAN1_Loc11 and the Platform location is CAN1_Loc12. Select CAN1_Loc11 from the pull down menu. Click on OK.
4. A display file will open. Note the numbered tabs at the bottom of the computer screen. Use the arrows on the bottom left of the screen to view additional tabs. Select tab 8) Export (refer to Figure 6). Record the current calibration settings from the information shown on tab 8 in the chart on pages 7 and 8. Of the three lower control calibration settings (Chassis Voltage Fault THRESHOLD, Chassis Voltage Fault RESET, and Lower Boom Angle OFFSET), only Lower Boom Angle OFFSET needs to be recorded.

	A	B	C	D	E	F	G
1	Calibration Settings Export Page						
2	Function	Setting					
3	Lower Boom Angle OFFSET	0.00					
4	Chassis Voltage Fault THRESHOLD	10.00					
5	Chassis Voltage Fault RESET	10.50					
6							
7	ECU Model Number	PCM0904					
8	ECU Part Number	1751-6454					
9	ECU Serial Number	904HY3YSH A00					
10	Software ID	Jag_Lwr_A032					
11	Software Revision	Jag_Lwr_A032					
12							
13							
14							
15							
16							

1 2 Sensors 3 Inputs 4 Solenoids 5 Diagnostics 6 Diagnostics (cont) 7 Diagnostics (cont) 8 Export
 Connected [CAN1_Loc11]
 Ready

Figure 6 — Display File and Tabs

Recording the Original Settings (Continued)

5. After the turntable ECM calibration settings are recorded, leave the computer connected to the Turntable ECM. Close the turntable display by clicking the lowest of the 3 X's on the top right corner of the screen. Do not click on the top X of the 3 X's on the top right corner of the screen is clicked or the Altec MotoService will close. If the MotoService completely closes, it will need to reopen again it as in Step 1 of the Recording Previous Calibrations Settings section.
6. Now select File->Open in the MotoViewer. This time select the Platform_Calibration_AH_v0_11 file, and click Open.
7. A screen will open asking to choose the ECM will open up as it did in Step 3. Select ECU on (CAN1_Loc12) for the platform ECM at the upper control location.
8. The display will open up as in Step 4 for the turntable ECM. Use the arrows in the bottom left of the screen to display and select tab 9) Export. Record all of the calibration settings on the calibration sheet at the end of the instructions.

Make sure all ECM settings are recorded before going on to the next step.

9. Close Altec MotoViewer by clicking on the top most "X" in the upper right of the screen.

Updating the Two ECMs on the Unit

Updating the ECM

1. On the computer, open up Altec MotoUpdate. This can usually be found by going to Start Menu->All Programs->Altec Service Tools->**Altec MotoUpdate** (refer to Figure 7). Make sure it is the Update, and not the Viewer.
2. A Welcome window will open to begin the update process (refer to Figure 8).

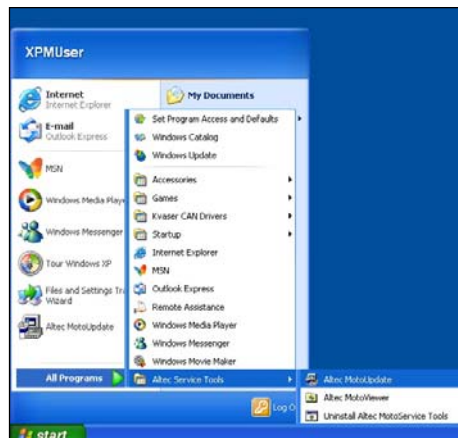


Figure 7 — Beginning The Update

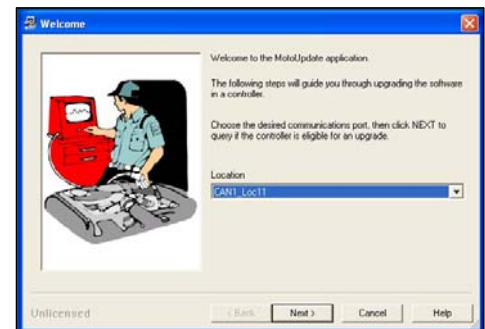


Figure 8 — Welcome Window

3. To update an ECM, the computer has to be physically connected, using the interface cable, to the programming port at that ECM's location. Make sure the computer is still connected to the turntable programming port, and that ECM will be updated first. With Altec MotoUpdate open, the drop down screen under Location will allow the user to select the appropriate Location for the ECM. Make sure the lower ECM, CAN1_Loc11, is identified in the Location Field. Then click Next.

Updating the Two ECMs on the Unit (Continued)

4. Altec MotoUpdate will then search for upgrades that are available for the ECM that has been selected (refer to Figure 9). The upgrade will appear below CalibrationID in the window.
5. Choose the upgrade in the Upgrade Option Window named Jag_Lwr_A085 by highlighting the line. Click on Next. A warning window will pop up, asking if you wish to proceed. If the correct upgrade file was chosen, click on OK. The software will then update the turntable ECM.

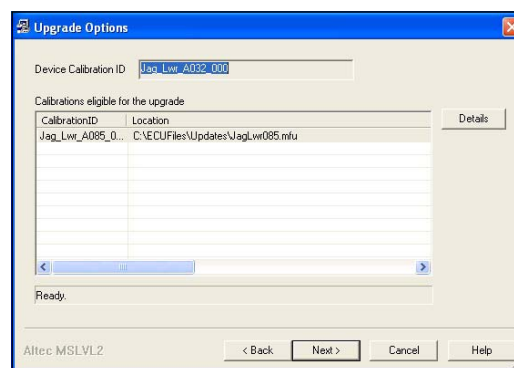


Figure 9 — Upgrade Option Window

6. When the update is complete, MotoUpdate will show a screen saying that the upgrade was successful (refer to Figure 10). Click on Finish.
7. Disconnect the CAN/USB interface assembly from the turntable programming port, and connect it and the computer to the platform programming port.
8. Open the Altec MotoUpdate as in Step 1 of this section. Select Location CAN1_Loc12 from the drop down menu in Altec MotoUpdate, then click Next.

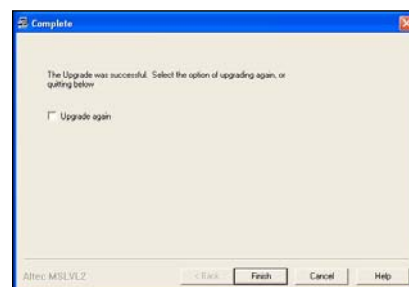


Figure 10 — Upgrade Completed Window

9. As in Step 4, the Altec MotoUpdate will search for available upgrade options. Choose the upgrade named Jag_Upr_A085 by highlighting the line. Click on Next. A warning window will pop up, asking if you wish to proceed. If the correct upgrade file was chosen, click on OK. The software will then update the platform ECM.
10. After the update is successful for the platform ECM, close the program on the computer.
11. Once both the turntable and platform ECM are updated, the previous calibration settings must be re-entered. This must be done through Altec MotoViewer. While still connected to the platform programming port, close the Upgrade and open Altec MotoViewer. Then open the "Platform_Calibration_AH_V0_12" file. Note: this is a different file than was opened earlier. When asked to Choose ECM, as in Step 8, select CAN1_Loc12.
12. Use the arrows in the bottom left of the screen to display and select tab 9) Export. This is the tab for all previous calibration settings. *NOTE: the updated ECM changes how Lower Boom Angle Offset is stored. Before it was listed as a calibration settings at the turntable, after the update it is listed with the calibrations settings at the platform.*
13. Enter the calibrations settings that were previously recorded. Make sure to enter Lower Boom Angle recorded from the Turntable Calibrations previously into the Platform Calibrations. To enter a calibration number, select the cell then type the new calibration number and press enter. DO NOT PRESS DELETE WHEN A CELL IS SELECTED. If Delete is accidentally pressed when a cell is selected, close the display then reopen it and enter the value again.

Completion

14. After all the calibration settings at the platform are entered, close Altec MotoViewer. No calibration settings need to be entered at the Turntable ECM after it is updated.
15. Save all updated calibration settings in the ECM by unplugging the laptop from the ECM if the chassis engine is shut off. The ECM will time out and go blank after a short time indicating the ECM is not active. The updated settings will be saved at that time. If the engine is running, disconnect the laptop from the ECM and shut the engine off. The ECM will then time out and go blank.
16. After all the calibration settings are updated, the perform a controlled shut down on the unit as explained in the Operator's Manual.

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Calibration Settings Chart

Model Type _____ Serial No. _____

FUNCTION	ORIGINAL SETTING	SETTING RE-ENTERED
Model Type	_____	
Lower Boom Angle Offset	_____	
Upper Boom Offset	_____	
Platform Offset	_____	
Joystick X-axis CENTERED VOLTAGE	_____	
Joystick X-axis MIN VOLTAGE	_____	
Joystick X-axis MAX VOLTAGE	_____	
Joystick X-axis CENTERED DEADBAND	_____	
Joystick X-axis FULL-RANGE DEADBAND	_____	
Joystick Y-axis CENTERED VOLTAGE	_____	
Joystick Y-axis MIN VOLTAGE	_____	
Joystick Y-axis MAX VOLTAGE	_____	
Joystick Y-axis CENTERED DEADBAND	_____	
Joystick Y-axis FULL-RANGE DEADBAND	_____	
Joystick Z-axis CENTERED VOLTAGE	_____	
Joystick Z-axis MIN VOLTAGE	_____	
Joystick Z-axis MAX Voltage	_____	
Joystick Z-axis CENTERED DEADBAND	_____	
Joystick Z-axis FULL-RANGE DEADBAND	_____	
Lower Boom Up MIN PWM	_____	
Lower Boom Up MAX PWM	_____	
Lower Boom Down MIN PWM	_____	
Lower Boom Down MAX PWM	_____	
Upper Boom Up MIN PWM	_____	
Upper Boom Up MAX PWM	_____	
Upper Boom Down MIN PWM	_____	
Upper Boom Down MAX PWM	_____	
Turntable Rotate CW MIN PWM	_____	
Turntable Rotate CW MAX PWM	_____	
Turntable Rotate CCW MIN PWM	_____	
Turntable Rotate CCW MAX PWM	_____	
Lower Boom Extend MIN PWM	_____	
Lower Boom Extend MAX PWM	_____	
Lower Boom Retract MIN PWM	_____	
Lower Boom Retract MAX PWM	_____	
Upper Boom Extend MIN PWM	_____	
Upper Boom Extend MAX PWM	_____	
Upper Boom Retract MIN PWM	_____	
Upper Boom Retract MAX PWM	_____	
Jib Up MIN PWM	_____	
Jib Up MAX PWM	_____	
Jib Down MIN PWM	_____	
Jib Down MAX PWM	_____	
Winch Out MIN PWM	_____	
Winch Out MAX PWM	_____	
Winch In MIN PWM	_____	

Calibration Settings Chart (Continued)

Winch In MAX PWM		
Platform Rotate CW MIN PWM		
Platform Rotate CW MAX PWM		
Platform Rotate CCW MIN PWM		
Platform Rotate CCW MAX PWM		
Platform Level Up MIN PWM		
Platform Level Up MAX PWM		
Platform Level Down Min PWM		
Platform Level Down MAX PWM		
Min PWM Calibration Mode		
Lower Boom Up/Down RAMP ON		
Lower Boom Up/Down RAMP OFF		
Lower Boom Up LOW RANGE GAIN		
Lower Boom Down LOW RANGE GAIN		
Upper Boom Up/Down RAMP ON		
Upper Boom Up/Down RAMP OFF		
Upper Boom Up LOW RANGE GAIN		
Upper Boom Down LOW RANGE GAIN		
Unit Rotate RAMP ON		
Unit Rotate RAMP OFF		
Unit Rotate CW LOW RANGE GAIN		
Unit Rotate CCW LOW RANGE GAIN		
Lower Boom Ext/Ret RAMP ON		
Lower Boom Ext/Ret RAMP OFF		
Lower Boom Extend LOW RANGE GAIN		
Lower Boom Retract LOW RANGE GAIN		
Upper Boom Ext/Ret RAMP ON		
Upper Boom Ext/Ret RAMP OFF		
Upper Boom Extend LOW RANGE GAIN		
Upper Boom Retract LOW RANGE GAIN		
Platform Rotate RAMP ON		
Platform Rotate RAMP OFF		
Platform Rotate CW LOW RANGE GAIN		
Platform Rotate CCW LOW RANGE GAIN		
Jib RAMP ON		
Jib RAMP OFF		
Jib Up/Ext LOW RANGE GAIN		
Jib Down/Ret LOW RANGE GAIN		
Winch Up/Down RAMP ON		
Winch Up/Down RAMP OFF		
Winch Up LOW RANGE GAIN		
Winch Down LOW RANGE GAIN		