PREVOST

Instruction Sheet IS-15906

BERU TPMS Installation
H3 Series

Parts Required

Part#	Quantity	Description
651080	4	Kit Valve-13 HD / 22.5 X 10.5 ALUM WHEEL (**SEE PICTURE BELOW**) VIP
651081	4	Kit Valve - 40DEG 13 HD / 22.5 X 9.0 ALUM WHEEL (**SEE PICTURE BELOW**) VIP
651083	9	Kit Valve (Steel wheel seated coach)
564327	9	BERU SENSOR
066445	9	DECAL WITH CARE SENSOR INSIDE ENGL.
564077	3	BERU ANTENNA
5001332	3	SCR MA PAN PH SS M4-0.7x16
502556	9	WSH FL SS 4.3x9X.8
5001696	6	SCR MA PAN PH SS M4-0.7 X 35MM
406085	3	SUPPORT, ANTENNA
564112	1	BERU ECU, Retrofit
382406	1	SUPPORT ECU TPMS (Not needed prior to US07,Can also be mounted to FJB if you have room)
406119	3	PROTECTOR, ANTENNA
560561	1	CANTRAK DISPLAY
564084	1	TB PLATE WITH TPSM (for flat mount only) not needed for retrofit
564086	1	TB REAR PLATE WITH TPMS
067205	1	BERU ANTENNA HARNESS
067585	1	HARNESS, FRONT ANTENNA TPMS (VIP & ISS only)
067437	1	HARNESS FJB TPMS
563593	2	Termination resistor
504264	1	Gourmet
Needed		

- **Parts required may vary depending on the following:**

  - Type and size of rims
  - Year of coach
  - I-Beam or ISS front suspension
  - Will the customer want the factory flush mount look (requires more cutting or fabrication). Or is it expectable to have the display mounted over the existing switch holes in the dash as shown in this presentation?

- Shown below are the available valve stem for instillation

Where to begin?

- **It is preferred to start in the dash area while you are still clean!**
- Depending on how many switches are located on the left side panel or how many options are on the coach you may need to relocate a few switches to the left side console.
- The BERU display will take up six switch positions.

Before

After

Before getting started test all dash switch functions to insure everything is working correctly. If there are any issues or something is not working report it to your supervisor so they can inform the customer before we start the install.

It is recommended to read these instructions prior to attempting this install

It is up to you to work with the customer to decide what switches to move and or relocate to make room for the display. You may want to look at other coaches in their fleet to make the switch location similar to what they are use to.

Coaches with smart wheel may have enough empty positions to use so you may not need to relocate any to the side counsel.

On this coach we located the tell tail test and wheel chair switch on each side of the ignition switch.

This gave us 4 blank positions, we need a total of six to mount the display so we chose to relocate the drivers & passengers windshield blinds to the side counsel as shown in the next slide.

Determine Switch position

- **What switches to move?**

We started out with 4 blank positions in the dash panel that we could move switches to, we kept engine functions together such as high idle, engine brake and override.

This meant we needed to relocate 2 switches to the side counsel here, we chose the drivers and passenger WS blinds. This was accomplished by building a simple 2 foot extension harness using 9 wires.

Many switches use a common power supply and lighting circuit, you can reduce the number of wires you need to run in the extension harness by cutting the connection prior to the solder joint.

Route the connectors down the left hand side of the dash under the switch pad and mount the switches in there new location.

Switch position after relocation

Y Room needed for the TPMS monitor

Using a 2 & 3/4 inch hole saw carefully cut the opening for the back of the monitor,

*this is a thin layer of plastic very little effort is needed

Find the center of the switch opening and drill a 1/8th pilot hole, finding center is critical to insure the monitor will cover all the switch openings.

Mount the monitor

- Using the backing plate and four screws mount the monitor to the dash
- Plug in (Wiring Harness 067437) to the back of monitor & install terminating resistor Res-30, then separate the harness at C224

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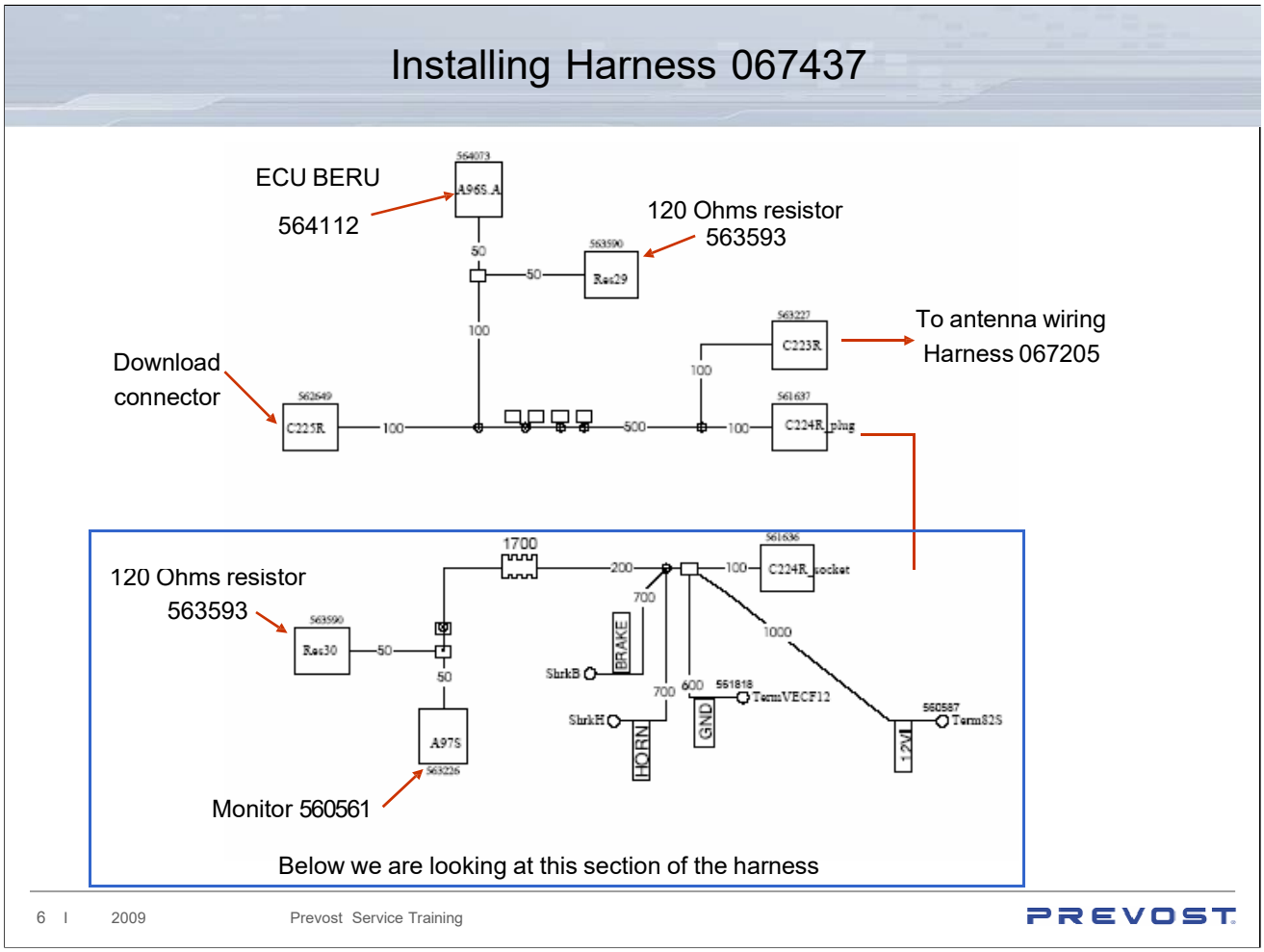
Before going to the front Junction Box , turn on the ignition and test all the switches for proper operation.

Make sure everything functions correctly.



Above you see the diagram lay out of the harness, the harness can be split at C224 for ease of instillation and inspection. Below is the split harness.

Inspect harness 067437

- When you disconnect C224 inspect the pin position, as shown in the photo. we have found can high terminal in the wrong position many times

Move socket terminal from 7 to 5 to match pin terminal

Locate C224 that was fed down from the dash earlier, it should be located in the upper left of the FJB. Gently pull the excess harness in to the FJB.

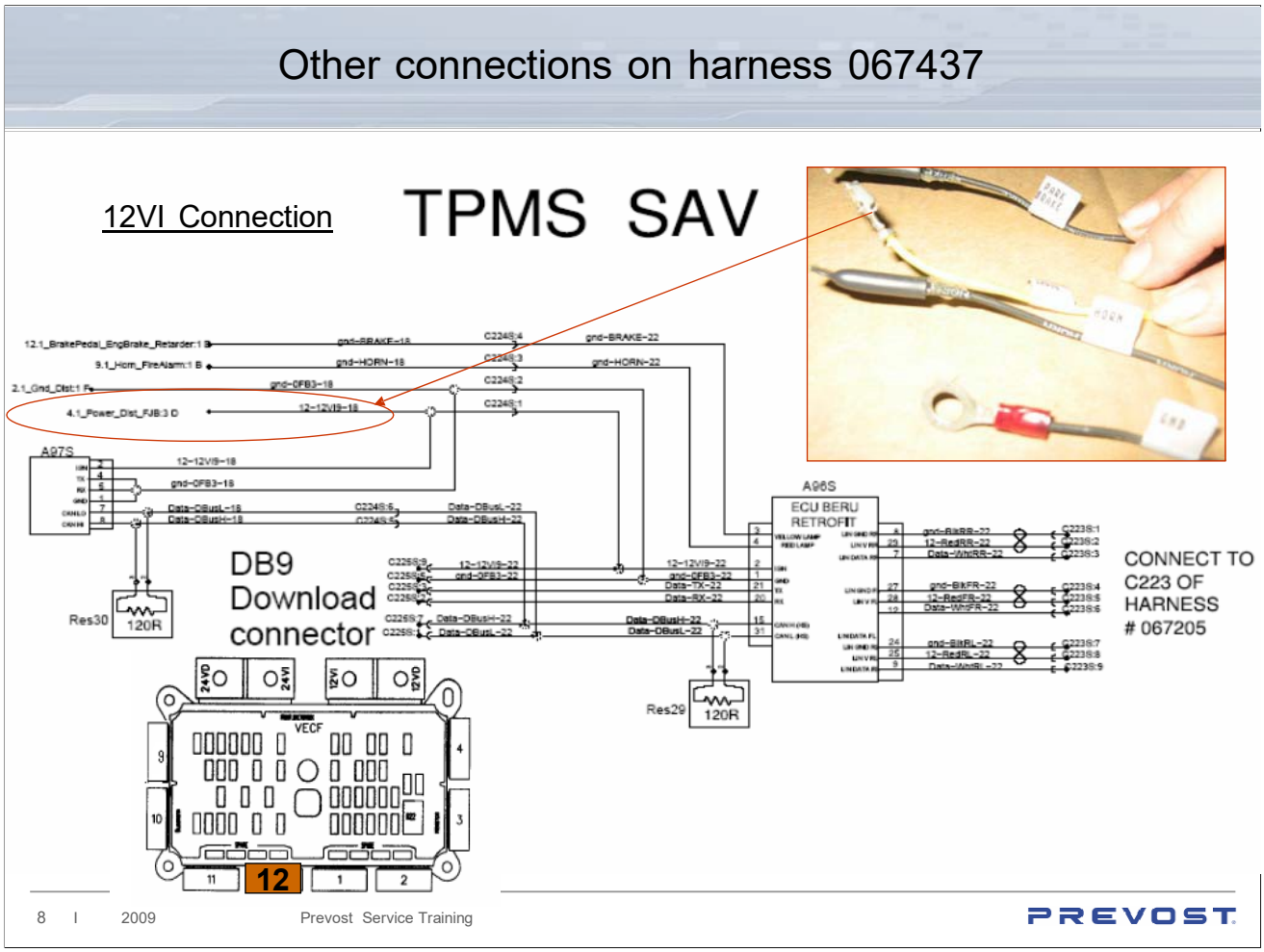
We have found many of the harnesses wired incorrectly, pins 1-6 are used in this connector 7-9 should be empty.

In most cases you will need to move CAN high (yellow wire) from pin 7 to pin 5.

After inspecting the harness you can connect C224 back together,

<u>For the next steps in this instillation make sure all connections are soldered and heat shrink to prevent weak areas and future corrosion</u>

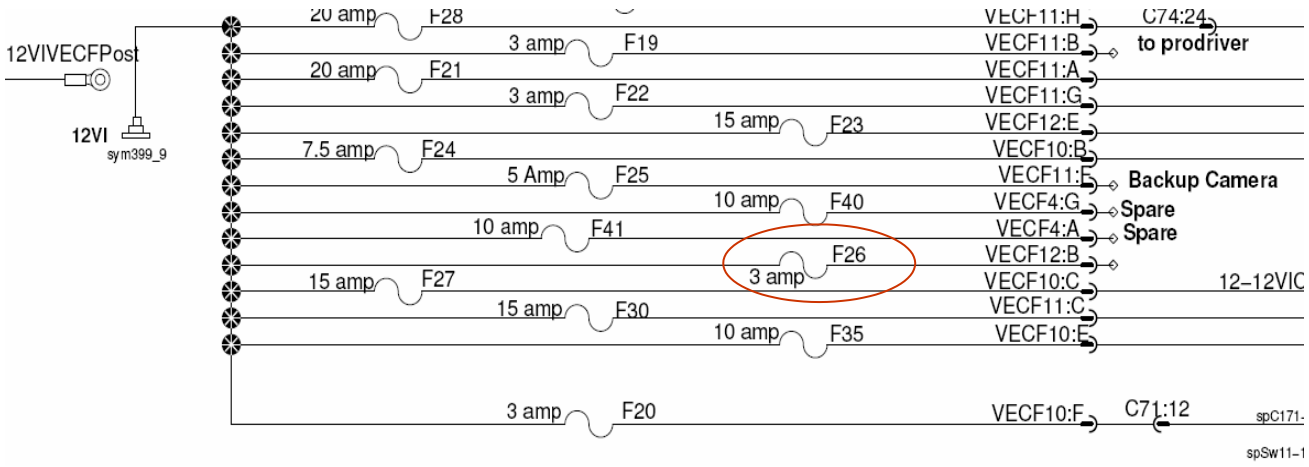
Other connections on harness 067437



There are four additional wires to connect in the harness, 12VI power supply, Electronic ground, park brake signal & horn. Connectors are labeled as shown above.

Depending on the year of the coach your power supply will be taken from different areas.

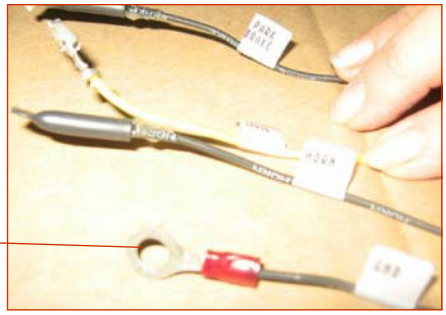
All multiplex production H3 vehicles use the terminal provided and install in VECF connector 12 position B, if the coach is equipped with smart tire you will need to remove the existing wire in that position.. If F26 fuse position is empty install 562599 3amp fuse. Coaches prior to Multiplex you will need to connect to Post C 12VI in the FJB, using fusible link 563061 and the 3amp fuse mentioned above

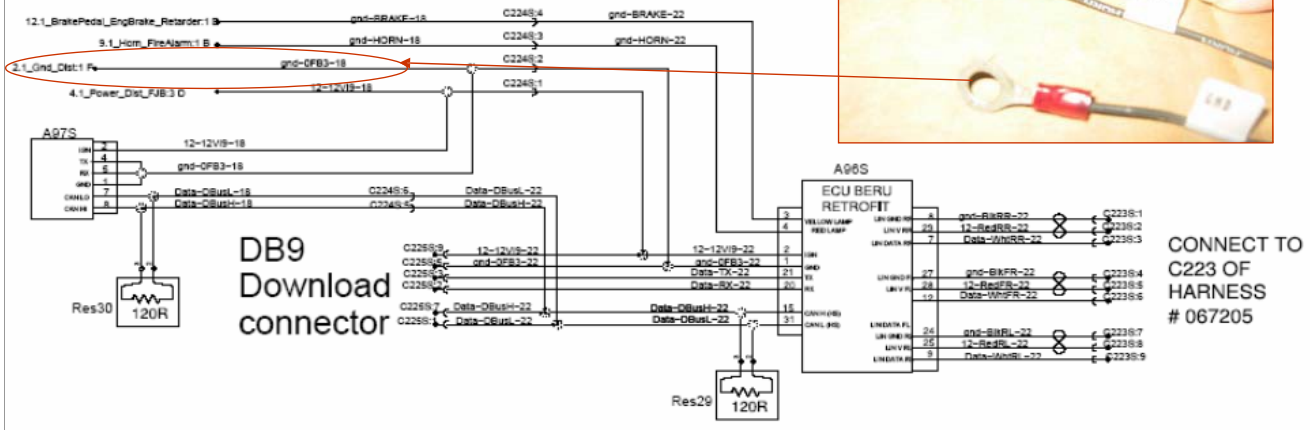


Other connections on harness 067437

Ground Connection

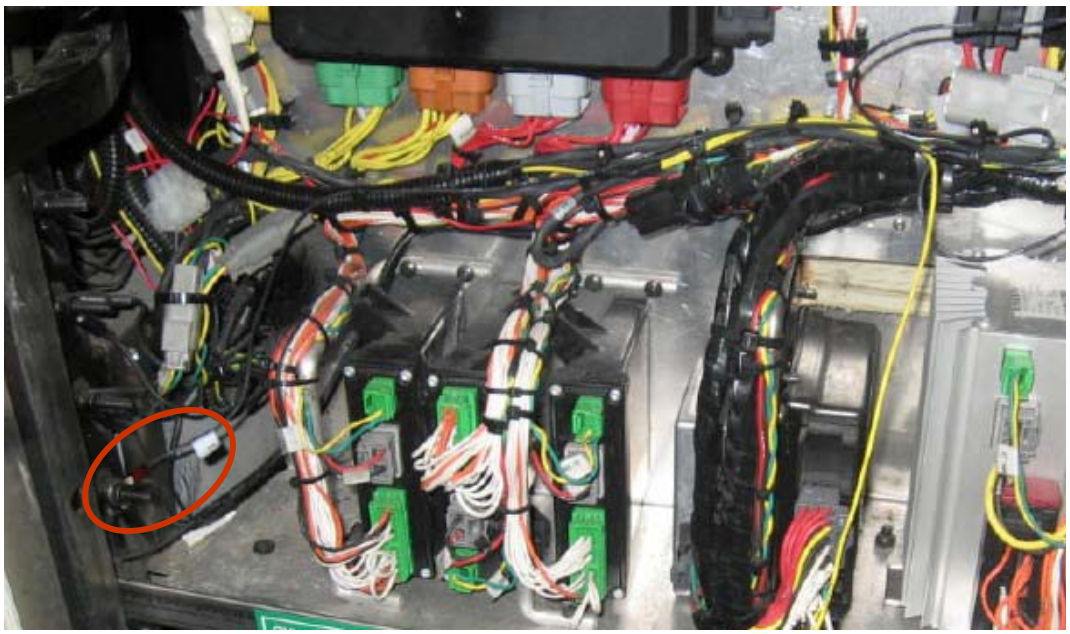
TPMS SAV





Next we connect the Electronic ground, wires are labeled as shown above.

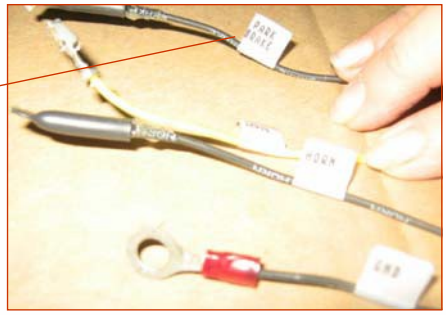
The wire that is labeled GND with the ring terminal shown above should be connected to the electronic ground located in the FJB as shown below

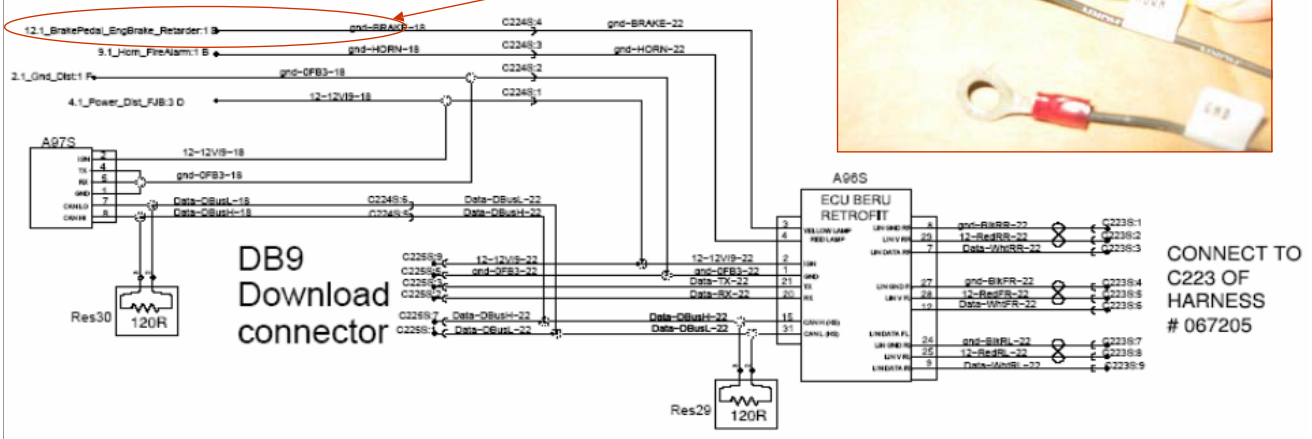


Other connections on harness 067437

Park Brake Connection

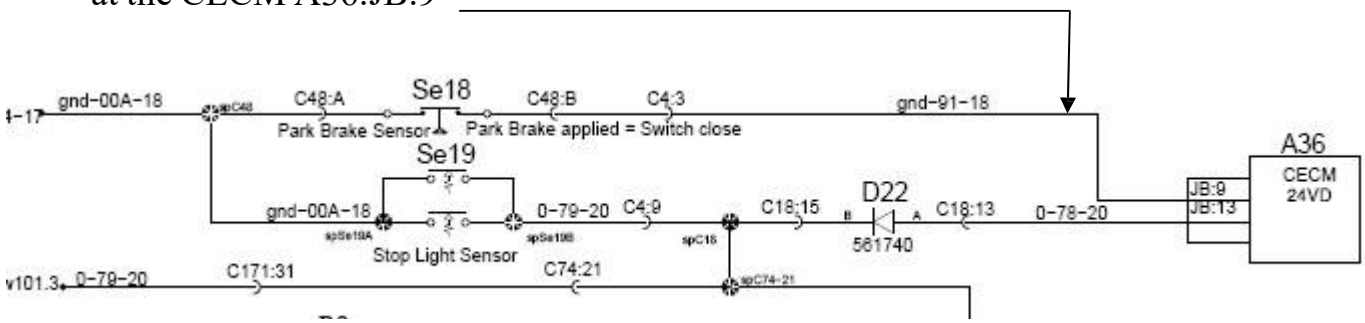
TPMS SAV





Next we will connect the park brake signal, the circuit is labeled as shown above.

Multiplex coaches we connect the park brake wire park brake signal on wire 91 at the CECM A36:JB:9

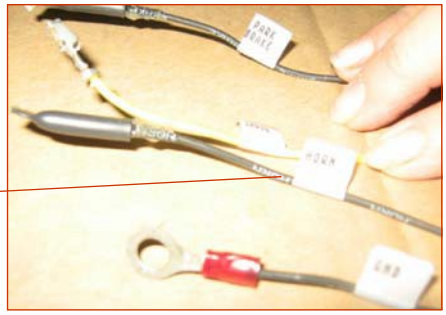


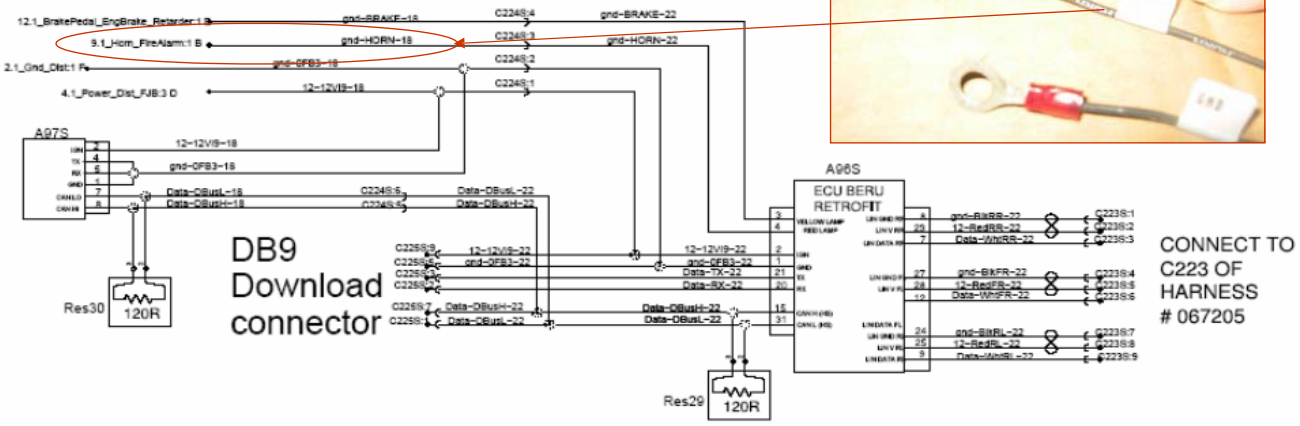
For non Multiplex you will need to connect the park brake signal wire to terminal 87 of the R-5 Relay in the FJB. This will require a terminal part # 561181.

Other connections on harness 067437

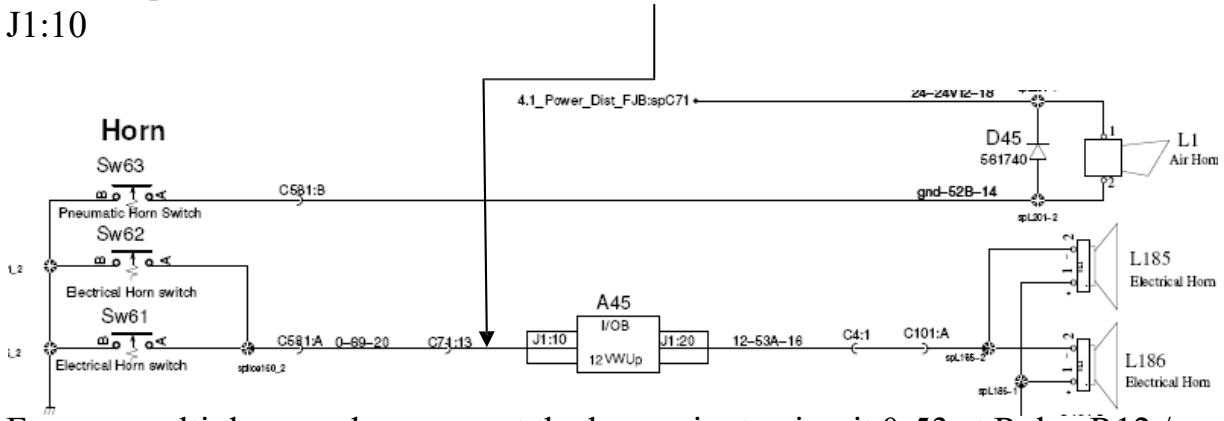
Horn Connection

TPMS SAV

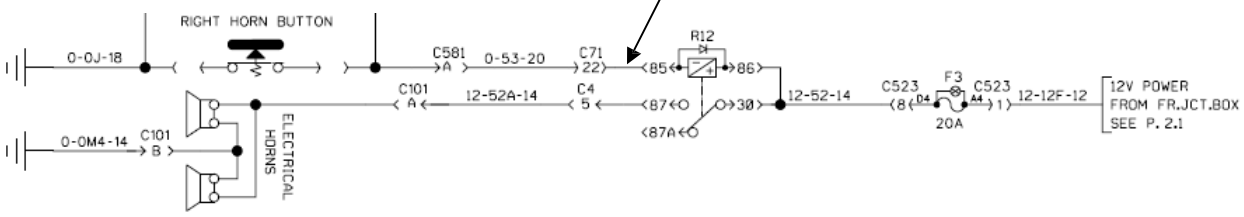




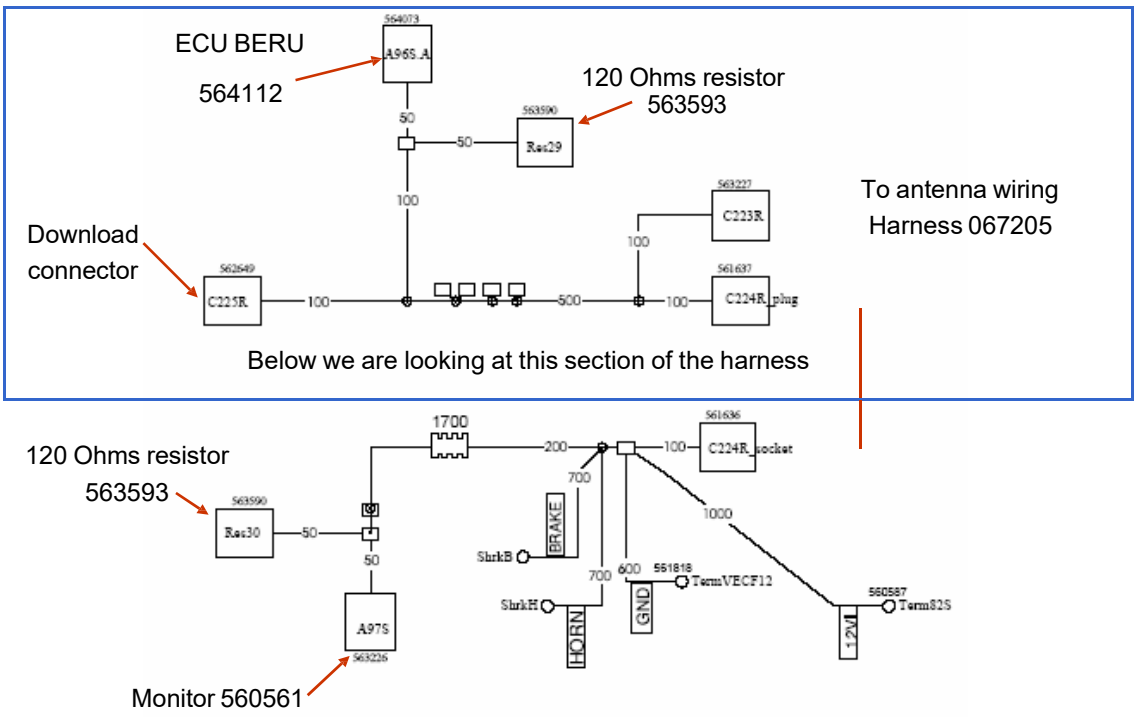
Next we connect the horn. circuit, connections are labeled as shown above.
For Multiplex coaches we connect the horn wire to circuit 0-69 at module A45 J1:10



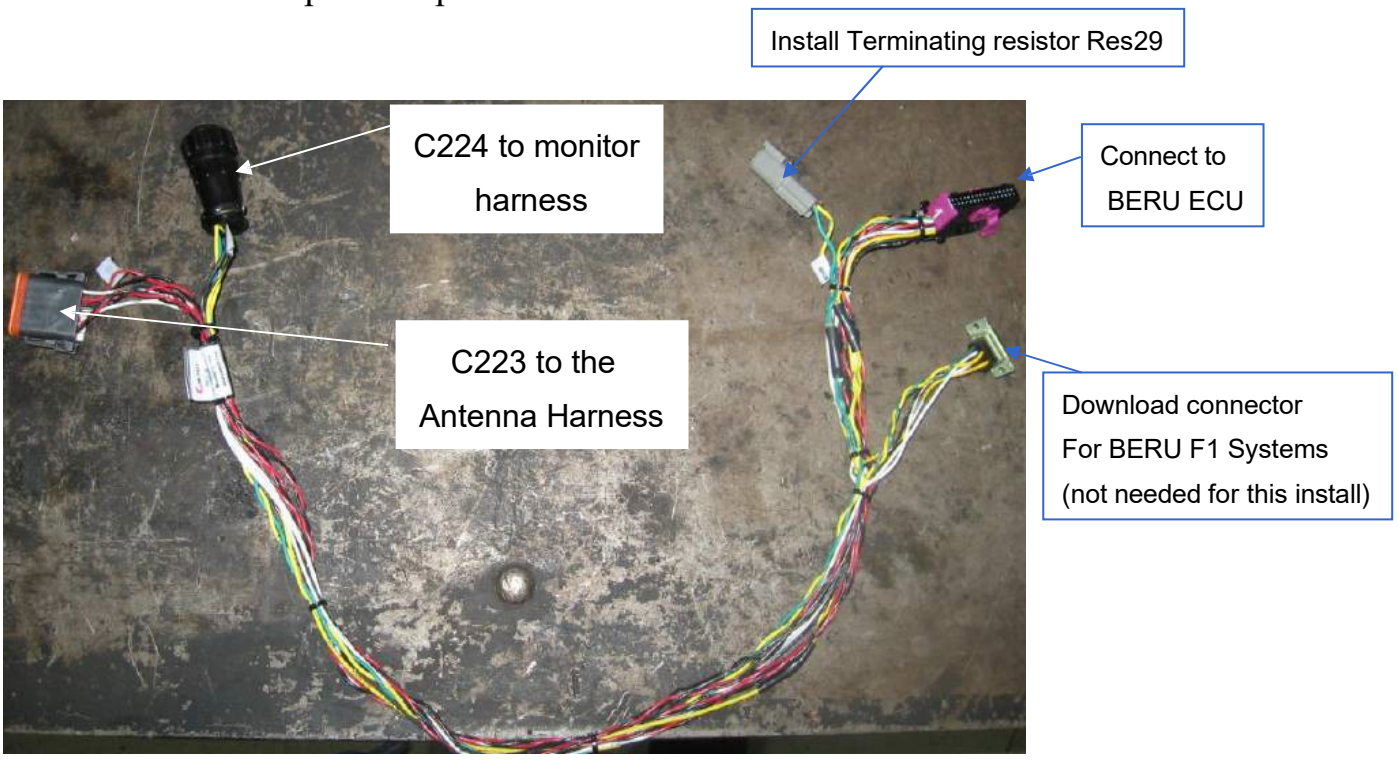
For non multiplex coaches connect the horn wire to circuit 0-53 at Relay R12 / FJB



Installing Harness 067437



Above you see the diagram lay out for the FJB portion of the harness, the harness can be split at C224 for ease of instillation and inspection. Below is the ECU & antenna portion split harness.



Mount the ECU

- **Two methods may be used**

Factory mounting bracket

Below the CECM

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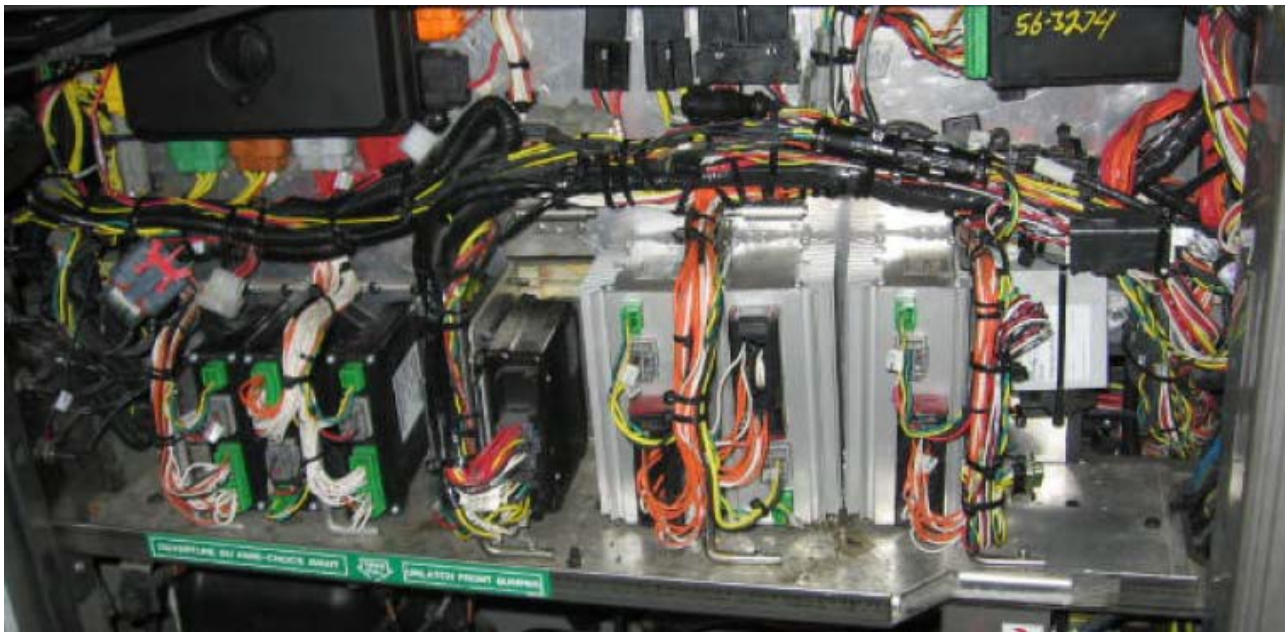
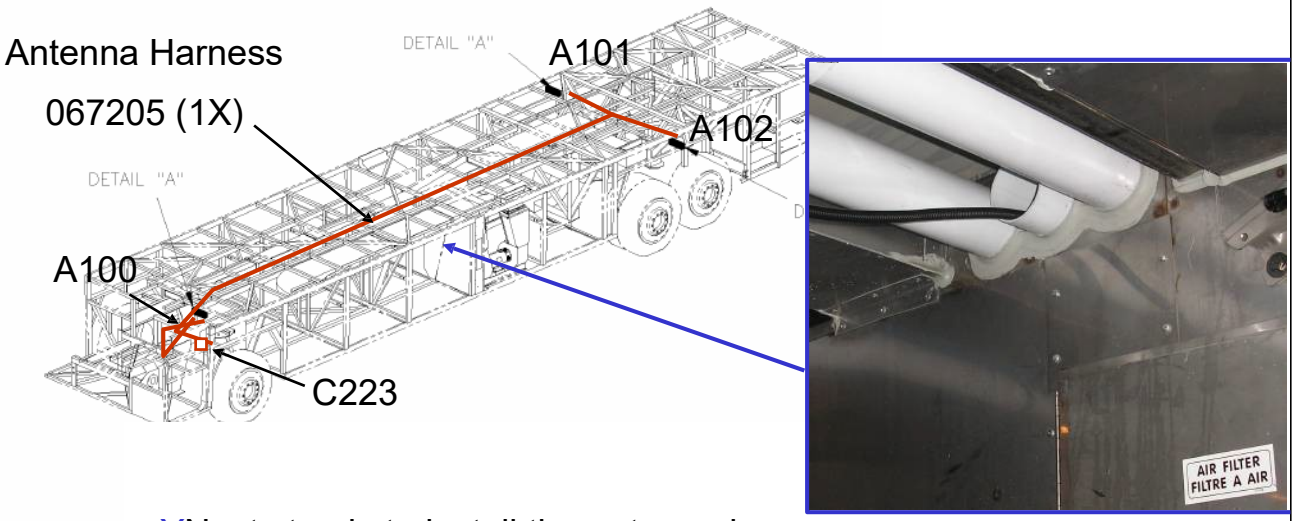
Coaches with US07 engines or the keyless module in this area will need to use the factory mounting bracket as shown in the photo above.

Reconnect C224 and connect the BERU ECU, pay attention to the cable routing and do not cable tie the new harness yet.

Below is a good example of the clean professional installation.



Install (Wiring Harness 067205)



YNext step is to install the antenna harness

Starting in the 3rd bay push connector

A101 & A102 of the harness through the

empty tube towards the rear of the coach

Open all the bays on the drivers side of the coach, feed C-102 & C-101 through the open tube as seen in the photo above, pull enough of the harness through to the last bay to reach the tag axle area. Then route C-223& A-100 between the 2 PVC pipes all the way to the front bay. You can use cable ties to support the harness but do not secure them at this time

Install (Wiring Harness 067205)

- Loosely route the harness to the front of the coach securing it to the second tube in from the drivers side.

Remember to keep
Everything loose until
Harness is installed

Below view from 1st bay facing the front of the coach

Install (Wiring Harness 067205)

Drop new harness
Over shelf and into
Spare tire
compartment

Install (Wiring Harness 067205)

Spare tire compartment

New harness splits from Main connector C223R and A100

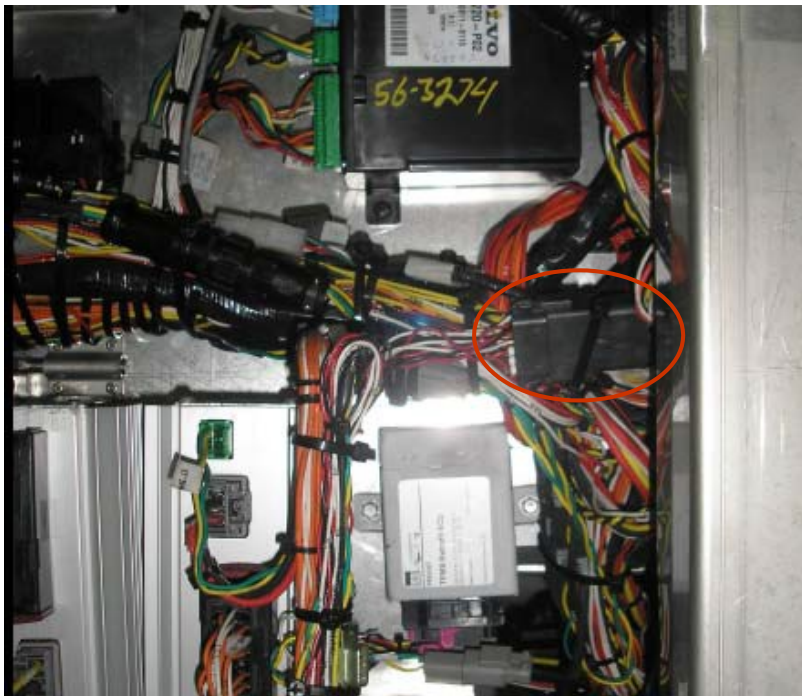
A100 connector will be routed with the brake air lines to the front axle area

C223R will be routed to the FJB to connect with the BERU ECU harness

Drop bumper, remove spare tire and locate the antenna harness, the small section of harness with connector C-100 will be routed with the brake air lines to the front axle area as shown above. You will first have to cut the cable ties around the rubber boot from under the coach to allow room to pull the C-100 connector and harness to go through. At this time route C223 and the remaining harness to the FJB keeping it to the top of the compartment going to the rear section of the FJB

Install (Wiring Harness 067205)

Y Accessing C223R in the FJB.



From the spare tire Compartment route C-233 through the steering compartment Up to the FJB connect & route harness securing with cable ties as shown .

With the harness installed you can connect C-223 together and secure with cable ties.

Install (Wiring Harness 067205)

- Accessing the harness from the other side.

From the spare tire Compartment route C100 through the tube to the front axle area.

Mount the sensor & shield route harness and secure with cable ties as shown.

Sensor needs to be mounted with a slight downward slant to the connecter side to prevent water from running into the end of the sensor.

Now secure the harness with cable ties, returning to the spare tire compartment and securing the new harness every six inches.

Form the first bay pull the excessive harness to the rear of the coach and start to secure the harness to the PVC tube working your way to the rear bay.

Install (Wiring Harness 067205)

- In the last bay, drill a 1/8th pilot hole spaced 2 &1/2 inches from the existing tube and on center line with it
- Using a 1-1/8 hole saw drill in the bulkhead in the position shown

First measure 2-1/2 inches away from the center line of the existing PVC tube, drill a 1/8th pilot hole in the bulkhead then using a 1-1/8th hole saw. This is where the harness will be routed to the rear antennas.

Install (Wiring Harness 067205)

Y Route connectors 101 & 102 through the hole and resize gourmet to fit opening

YAt the end of the job

Don't forget to Sika up the harness & gourmet from both sides

After you get the harness in the proper position don't forget to seal with sika.

Install (Wiring Harness 067205)

Y Now its time to remove the fenders on both sides of the coach.

Y Then remove the inner fender liner or splash guard on the drivers side of the coach giving access to the harness you ran earlier.

You can reach the harness located just above the air tank shown.

Install (Wiring Harness 067205)

- From under the coach route the harness over the return air duct cable tying to the existing tube until you reach the end

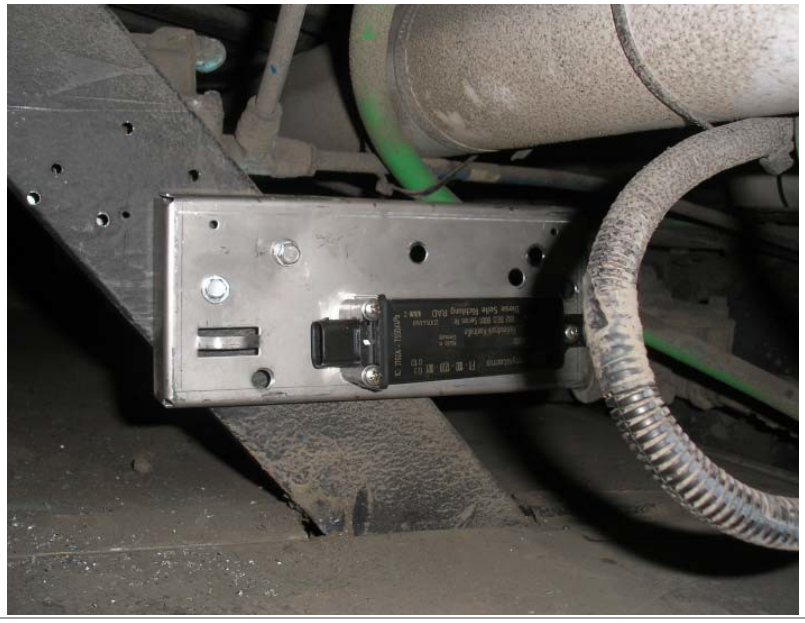
Installation of rear antennas

- Install left rear antenna and mounting plate, it is important that neither side of the antenna is blocked by the structure as shown.

- Route the harness and secure as shown.

Installation of rear antennas

- Install right rear antenna and mounting plate, it is important that neither side of the antenna is blocked by the structure as shown.
- Route the harness and secure.



Installing the sensors

- Each sensor comes with a identification tag as shown, it is good practice when mounting the sensor to write the wheel position on the back of the tag as shown.

Installing the sensors

- Install the sensors as shown respecting the torque marked on the sensor .

Installing the sensors

Y When remounting the tires make sure you have proper clearance between rotor and valve stem .

Make sure to respect the proper torque and position of the valve stem offset when remounting the tires on the drive.

Wheel ID

- You can use either method to identify each wheels position with the ECU, either use set wheel ID and manually enter the number on the tag to the corresponding wheel  Or use the learn wheel ID

Operating instructions can be found in the currant operators of owners manual for each type coach and should be printed and supplied to the customer when the install is complete.