



Service Bulletin

Dear Collins Bus Corporation Customer,

Issue Date: April 17, 2014

Subject: **Lighted Sign**

Models Affected: **Light for End Cap Signage on SW – OPTION 540-11-12**

Notes: This service bulletin is intended to assist Collins Bus distributors, their customers and or service shops in the proper techniques for repair and maintenance. Issues described in this bulletin may not apply to all Collins Bus units. Authorized technicians will be able to decide whether or not a unit with similar issues will benefit from the provided information.

Details: Information contained in this bulletin will help you better find and replace Lighted Sign LED Strips or potential issues with Lighted Sign LED Strips. Please follow instructions provided with each picture for details on problems and suggested repair.

Issue: Lighted LED Strip may experience corrosion at the wire connection which may cause failure.

Location: Top Front center and Top Rear center of end cap.
See Figure 1-A

Figure 1-A Front



Figure 1-A Rear



Corrective Action: Replace Lighted LED Strips with the new Lighted Sign Retro-Kit



Parts Needed:

(6) 210210 LED tag lights
Two 210209 Harnesses
Six 3/4 inch plastic grommets 210723
Four blue butt connectors 403169
One blue ring terminal 403150
Twelve 412287 #8x1 Stainless Steel screws
Two 210723 3/4" grommet one sided
Electrical tape

Note: Buses without A/C Please Order

Optional parts

1 - 442104 Maintenance access plate
4 - 10-24 x 5/8 white torx screws 429125
T-25 torx plus stick fit driver

Tools needed:

Drill
1/8" drill bit
3/4" universal bit
Wire crimpers
Wire strippers
5' piece of fish wire
Phillips driver

Step1: Drill a 1/8" weep hole in the lights approx. 1/4" from edge that is to be installed to allow water to drain. Weep hole may be drilled in lights after installed as well.

NOTE: This step was added to document.



Step2: Start at the front of the bus.

Step3: Use Template to mark 9 holes - center the template on the sign depression bottom edge. Mark the holes labeled FRONT. See Figure 1-B

Figure 1-B



Step4: Drill all the holes with 1/8" bit.

Step5: Drill center hole for all three lights with 3/4" bit.

Step6: Slip gasket over wires on light and push circuit module through gasket. See Figure 2-A

Figure 2-A



Step7: If grommet is not slit, cut it with a pair of wire strippers.
See Figure 2-B

Figure 2-B



Step8: Install grommet on light between circuit.
See Figure 2-C

Figure 2-C



Step9: Push light wires, circuit module and grommet into $\frac{3}{4}$ " hole on front of bus.

Step10: Install light facing up with a gasket between the light and the bus using Self-tapping screws. Be careful not to strip screws in fiberglass.

Use clutch on drill to protect it.

Step11: Repeat steps 5 thru 9 for other two lights.

Step12: cut wires going to old strip light at grommet

Step13: Pull old rubber grommet out of hole and pull wires out of grommet.

Step14: Use butt connectors to cap off old lighted sign wires.

Step15: Push wires into bus.

Step16: Plug old lighted sign wire hole with new grommet.

Step17: Return to inside of bus.

Step18: Remove dimmer behind electrical panel. (Located on the right side behind the electrical panel opening).

Step19: Cut yellow and blue wires from dimmer back to green lighted sign wires.

Step20: Using 210209 harness supplied in kit with two blue butt connectors.

Step21: Use butt connector on harness to connect three white wires from harness to white ground on dimmer. See Figure 3-A

Figure 3-A



Step22: Connect green wire bullet connectors to black wires on all three lights.
See figure 3-B

Figure 3-B



Step23: Connect green wire bullet connectors to black wires on all three lights.
See figure 4-A

Figure 4-A



INSTALLATION REAR OF BUS WITH A/C



- Step 1:** Inside the rear of the bus take off the A/C evaporator cover.
- Step 2:** Go to outside rear of bus.
- Step 3:** Cut wires going to old strip light at grommet.
- Step 4:** Pull old rubber grommet out of hole and pull wires out of grommet.
- Step 5:** Use butt connectors to cap off old lighted sign wires.
- Step 6:** Push wires into bus.
- Step 7:** Plug old lighted sign wire hole with new grommet.
- Step 8:** Use Template to mark 9 holes, center the template on the sign depression bottom edge. Mark the holes labeled REAR.
See Figure 4-B

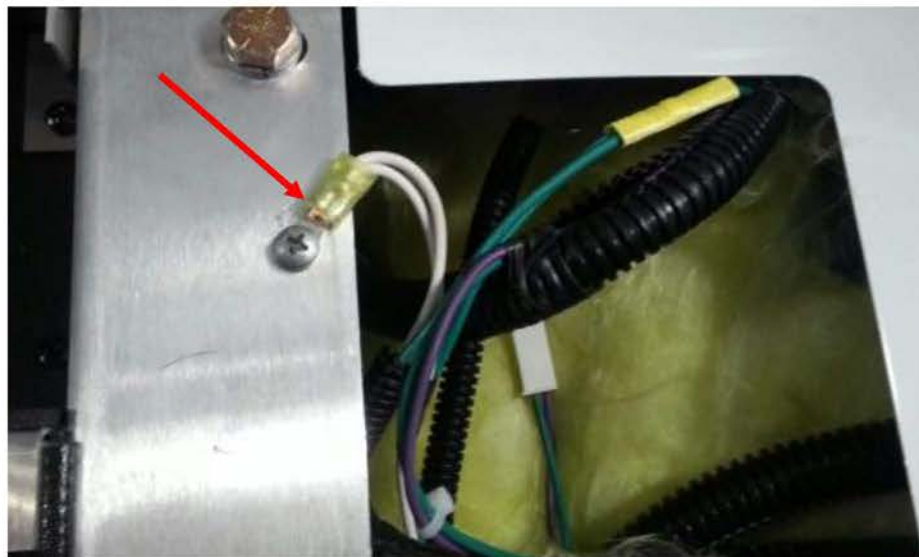
Figure 4-B



- Step 9:** Drill with 1/8 bit.
- Step 10:** Drill center hole for all three lights with 3/4 bit.

- Step 11:** Push Fish wire thru the $\frac{3}{4}$ hole on the passenger side that was drilled to mount the light
- Step 12:** Push the wire toward the driver side of the unit until you get to the a/c access hole or cutout.
- Step 13:** Use supplied 210209 harness with one blue butt and one blue ring terminal. The ring terminal is only used if the bus has an A/C Evaporator. If neither one has a ring terminal, cut the butt off of the white wire and replace it with a ring terminal.
- Step 14:** Tape fish wire to longest wires with blue bullets on harness 210209 inside the bus.
- Step 15:** Pull wires from inside to outside the bus until they are sticking out the wire hole drilled for the light.
- Step 16:** Repeat for all three lights make sure to use the shortest harness on the closest hole to the a/c access hole and the next shortest on the middle hole.
- Step 17:** Locate existing harness behind driver's side flashing warning lights through a/c access hole.
- Step 18:** Locate existing green wire labeled LTD SGN 56 in the harness.
- Step 19:** Cut wire and butt off end going toward the Evaporator.
- Step 20:** Use the butt connector on the new harness to attach three green wires to the other end of LTD SGN 56 wire.
- Step 21:** Use ring terminal on white wire to ground to the nearest chassis ground location. See Figure 5-A

Figure 5-A



- Step 22:** Proceed outside to rear of bus.
- Step 23:** Slip gasket over wires on light and push circuit module through gasket
- Step 24:** If ¾ inch grommets are not slit - cut three of them with wire cutters.
- Step 25:** Install grommets on lights between light housing and circuit board bulge on wire.
- Step 26:** Connect green wire bullet connectors to black wires on three lights.
- Step 27:** Connect white wire bullet connectors to white wires on three lights.
- Step 28:** Install lights facing up with a gasket between the light and the bus using self-tapping screws. Be careful not to strip out screws by over tightening. Use clutch on drill to prevent over tightening.

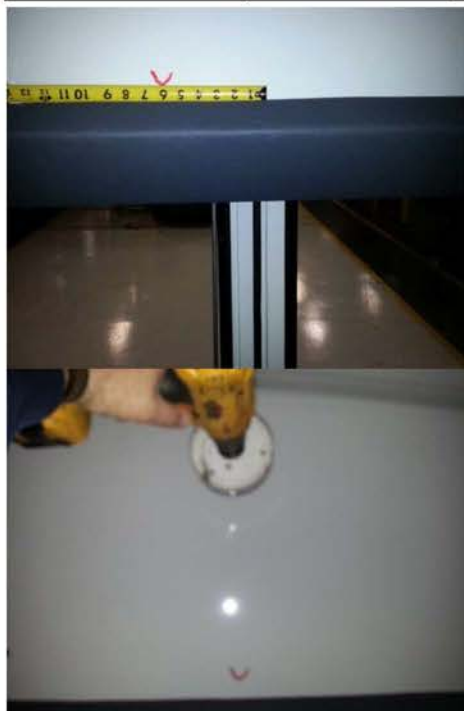
TIME ALLOWANCE: 1 ½ HOURS TOTAL PER BUS (FRONT AND REAR)

INSTALLATION REAR OF BUS WITHOUT A/C



Step 1: If the bus does not have an evaporator a 6 inch access hole will need to be drilled in the inside rear end cap. Drill with a hole saw at the location from the table below. An 8x8 maintenance panel can be ordered to cover the hole. The part number is 442104.

REAR WHEELS	HEAD HEIGHT	VERTICAL LOCATION	HORIZONTAL LOCATION
Single	Low	6" from the bottom of the end cap	6" from drivers side of rear door
Single	High	12" from the bottom of the end cap	6" from drivers side of rear door
Dual	High	14" from the bottom of the end cap	6" from drivers side of rear door



Step 2: Proceed outside to rear of bus.

- Step 3:** Cut wires going to old strip light at grommet.
- Step 4:** Pull old rubber grommet out of hole and pull wires out of grommet.
- Step 5:** Push wires into bus.
- Step 6:** Plug old lighted sign wire hole with new grommet.
- Step 7:** Use Template to mark 9 holes, center the template on the sign depression bottom edge. Mark the holes labeled REAR. See Figure 5-B

Figure 5-B



- Step 8:** Drill marked holes with 1/8 bit.
- Step 9:** Drill center hole for all three lights with 3/4 bit.
- Step 10:** Push Fish wire thru the 3/4 hole on the passenger side that was drilled to mount the light
- Step 11:** Push the wire toward the driver side of the unit until you get to the a/c access hole or cutout.
- Step 12:** Use supplied 210209 harness with one blue butt and one blue ring terminal. The ring terminal is only used if the bus has an A/C Evaporator. Cut off the ring terminal and replace with a blue butt connector.
- Step 13:** Tape fish wire to longest wires with blue bullets on harness 210209 inside the bus

- Step 14:** Pull wires from inside to outside the bus until they are sticking out the wire hole drilled for the light.
- Step 15:** Repeat for all three lights make sure to use the shortest harness on the closest hole to the a/c access hole and the next shortest on the middle hole.
- Step 16:** Locate old lighted sign wires through new 6 inch drilled hole.
- Step 17:** Locate existing green wire labeled LTD SGN 56 in the harness.
- Step 18:** Use the butt connector on the new harness to attach three green wires to the other end of LTD SGN 56 wire
- Step 19:** Connect white wire from new harness to white wire in old harness.
- Step 20:** Mount 442104 access plate over 6 inch hole with four 10-24 x 5/8 white torx screws.
- Step 21:** Go back outside bus to rear
- Step 22:** Slip gasket over wires on light and push circuit module through gasket
- Step 23:** If ¾ inch grommets are not slit cut three of them with wire cutters.
- Step 24:** Install grommets on lights between light housing and circuit board bulge on wire.
- Step 25:** Connect green wire bullet connectors to black wires on three lights.
- Step 26:** Connect white wire bullet connectors to white wires on three lights.
- Step 27:** Install lights facing up with a gasket between the light and the bus using self-tapping screws. Be careful not to strip out screws by over tightening. Use clutch on drill to prevent over tightening.

TIME ALLOWANCE: 1 ½ HOURS TOTAL PER BUS (FRONT AND REAR)

We regret the inconvenience this service may cause you. Please be assured that Collins Bus Corporation is striving to build our buses with the best value and safety available. Thank you for your cooperation in this matter. If you have questions about anything contained in this bulletin please contact

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Sincerely,
COLLINS BUS CORPORATION

Kelli Petz,
Customer Service Manager