

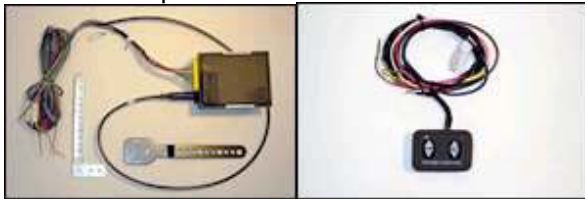
## Rostra Electronic Cruise Control Install On a Stratoliner or Roadliner

### MATERIALS LIST:

- 1 - Rostra Part # 250-1223 ([www.brandondist.com/products/cruise1223.htm](http://www.brandondist.com/products/cruise1223.htm))
- 1 - Signal Splitter part # 250-4369
- 1 - Engagement Switch # 250-3593
- 1 - Standard Relay (because we have LED lights)
- 5 - feet of 1/8" or 1/4" heat shrink tubing
- 12" black zip cable ties as needed

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1. Remove the seat, tool kit, and left side cover (covering the fuel lines).
  2. I did this installation without removing the tank. I did rotate it just enough to have easy access to the bellcrank, you can remove the tank if you want (for instructions on removing the tank, click here: <http://www.linerwiki.com/index.php?title=TankRemoval>).

3. Here's a picture of the kit contents:



You will have to find a suitable location for the unit. The servo box is approximately 4" x 5" x 3".

The best location for me was behind the right saddlebag.



Everyone's location may be different, some have mounted it under the tank, inside the air box. One person mounted it under the left saddle bag.

I ran the cables and servo cable along the right side and under the seat. The servo cable was then run under the seat and along the frame on the left side. You will be using a reverse throttle pull with this installation.

Next remove the rubber cover to get access to the 12 DIP switches.

The settings I used are:

1	2	3	4	5	6	7	8	9	10	11	12
on	on	off	on	on	on	on	off	on	on	off	off

This can vary some depending on your exact setup.

As you can see, I have mine set to manual. That's because I'm using the tach wire as a safety high RPM shut off.

The unit can be tucked between the right saddle bag and the wheel. Removing the right bag will give easy access to the programming switches. In fact you can leave the right bag off until the programming is where you want it. Although still suffering from some potential exposure to dust and water, it is not much different from what one might expect "under the hood" and probably better than under the saddlebag. I don't intentionally ride in wet conditions anyway. I did add silicone sealer to the (yellow) plug at the wires, although it looks to be a water resistant seal already.

#### **WIRE LOOM ROUTING:**

For the current mounting, all the wires from the unit were bundled together in the provided black plastic loom, then routed along the right side and crossing over to the left side under the seat

A couple of essential points:

1. The light green wire, the orange wire, and the light blue and black pair are not used.

3. Route the Brown fused servo wire and the Red fused switch wire to the ACC plug under the seat.

4. Route the Gray VSS wire to the vicinity of ECU.

5. Route the Blue (tachometer input) wire to the right side of the bike so it can reach the ignition coils.

6. The 4 and 10 amp fuses are in the harness and were taped together and left neatly protruding in the vicinity of the main fuse box so they would be easily accessible.

#### **WIRE AND CABLE CONNECTIONS.**

7. Separate the Black wire and cut it to length or coil it up. Solder a terminal lug on the end and mount the lug under one of the screws that mounts the servo bracket or to any other chassis ground location.

8. Routing the servo throttle cable. This is dependent on where you decide to mount the servo.

8a. For servo mounting behind the right saddlebag, route the servo throttle cable along the frame on the right side. Continue under the seat and along the left side. Be sure to make the bends in the cable wide and gentle so you don't kink the cable.

8b. For servo mounting inside the air box area with a PR BAK installed, route the servo throttle cable along the frame on the right side. Circle it back toward the front and route it between the two throttle bodies to the right front of the open area. Next, circle the cable back around to the left so it runs parallel to the throttle cables. Be sure to make the bends in the cable wide and gentle so you don't kink the cable.



8c. For servo mounting inside the air box toward the front of the box clearing the TB intakes and the air filter. It will just barely fit and must be moved far enough to the rear of the box for the indentions in the top of the air box to clear. Once you get the top of the box off you will see what I am talking about. I would think that those with aftermarket air filters may have more room to work with than the standard air box allows.

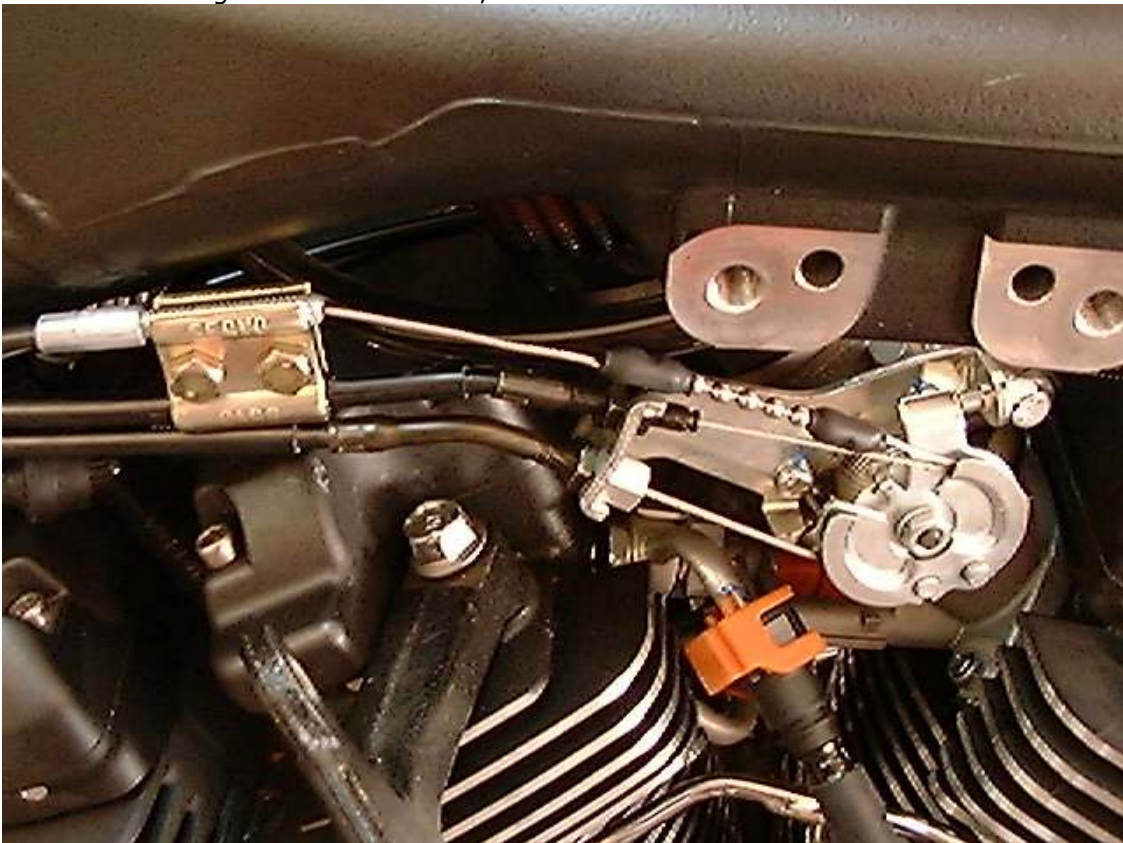
On this installation you must be willing to drill two holes in the air box. One for the servo control cable at the very rear of the box and one for the wiring harness on the left side of the box. Of course these MUST be sealed very well to preserve the integrity of the air box.

The mounting holes were drilled in the bottom of the box. The metal mounting plate may need to be reformed to accommodate this procedure. You could use the cut off portion of the mounting bracket as a stiffener on the bottom exterior of the air box.

9. For mounting behind the saddlebag, I made a bracket to mount the servo cable. I later painted it. Once the bracket is mounted, use the supplied lock nut and flag nut to mount the cable to the bracket. You can wait to tie wrap the cable to various points on the frame until you have finished running all the wires. Use loctite on the flag nut just to be safe.



10. For mounting in the air box area, use the method shown below.





11. The Rostra only comes with one loop cable, but this picture will give you an idea of what it looks like. Remove the motor mount brace on the left side to give you access to the bellcrank on the throttle body.



You will need to remove or loosen the motor mount to gain easy access to the bellcrank.

12. To remove the return cable, at the bellcrank end of the return cable, loosen the front nut all the way. Do not mess with the rear nut. This will gain you slack and you can remove the return cable from its mounting bracket.

13. Place the loop portion of the loop cable over the pin on the end of the return cable and reinsert the return cable into the bellcrank. The picture below shows a reverse cable hook up. I didn't mount mine to the frame like the picture shows.



14. Get the bead chain and cut it to a length of 3 beads. Insert one of the end beads into one of the bead chain couplers. My couplers were closed so tight I had to spread them open with two pairs of needle-nose pliers. After inserting the ball, I squeezed them back together. Insert the ball of the loop cable into the other end of the bead coupler.

15. Put one of the sleeves over the coupler.

16. After you have this done, use another ball chain link to attach the chain to the servo cable. Be sure to put a sleeve onto the cable before you make the final connection between the servo cable and the ball chain. You only want a maximum of 1/8" play with the servo cable fully extended. I adjusted mine to have almost zero play. The servo cable is now complete.

17. I used Darryl's suggestion to make a bracket (actually I had one made for me) to mount the control switch.

Pick up a piece of 1/8" aluminum from Lowe's that is about 2" wide and at least 5" long. Bend a 90 degree bend 2" from the end and then cut it off at 3" leaving a 2" x 3" angle piece. Next cut a piece 2" x 2" and weld it to the angle piece on the back side only. I installed the 2" x 2" piece in the approximate center of the 2" x 3" bracket.

You have to cut a slot in the 2" x 2" piece to pass the wires from the control switch. Using the template that comes with the switch, mark the piece. Drill a 1/4" hole at the top and bottom of the marked area and saw out the remaining metal between the two holes. Use a file to smooth the edges. This creates a slot for the control pad wires.

You'll need to drill a hole in the bracket so it can be mounted under the mirror stem of the left mirror. You'll also need to relieve the area where the bracket would hit the handlebar. Refer to Darryl's pictures for details.

After rounding the corners to match, sand and polish the bracket so it will look good. I attached double sided tape to the back of the bracket for added support before attaching with the mirror bolt. Before attaching the control pad to the bracket seal the back of the pad with silicone. IMHO it looks like a factory install.

Note: These pictures show the switch from the CCS-100 but the idea is the same.





18. After you are satisfied with your bracket, you might need to lengthen your wires from the control unit. Temporarily mount the control switch to the bracket but don't peel the backing off the mounting tape. Use a rubber band to hold the control in place.

After you have lengthened the wires, if needed, and decided where you want them to mate up with the wires from the servo, you can use the convoluted tubing (#6) to encase and protect the wires. This will give it a factory look.

Feed the wires from the control switch through the hole in the bracket and route the wires along the handlebar and down along the clutch cable. Trial fit the wires to where you want them to go. Route the wires between the headlamp assembly and frame. I ran mine down to just behind the left frame piece that connects the triple tree.

To splice the wires, strip about  $\frac{1}{2}$ " of insulation off the end of each wire. Slide a piece of shrink sleeving over each wire of one of the sets of four wires. Twist the matching colors of wires together and solder them. Slide the sleeving down over the solder joint and use the soldering iron or heat gun (some hair dryers are hot enough) to shrink the sleeving. Tuck the wires back inside the convoluted tubing and connect the two white connectors together. Use some cable ties to secure the connectors and the convoluted tubing.

19. Back at the servo, pull the red wire out of the tubing and strip about 1/2" of insulation off it. Don't worry if you cut it, it will be soldered. Strip about 1/2" of insulation off the red wire you cut off at the connector end and wrap it around the red wire from the servo. Use electrical tape to wrap around the joint and tuck the joint back inside the convoluted tubing.

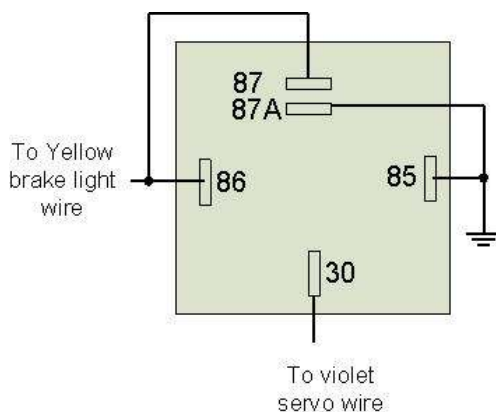
20. The red wire from the servo goes to a 12 volt source and one can be found inside the pouch under the ECU. The brown wire also must connect to a 12 volt source. I just spliced the red and brown wires together. The instructions say to connect the red wire to a constant 12 volts. That doesn't seem to be necessary. It works fine connected to a switched 12 volt source.

There's a 2-pin connector with a dummy plug inside the pouch under the ECU. Attach the two fused (red and brown) wires to the brown wire in this connector with a scotch lock connector that pierces the wire (no cutting).

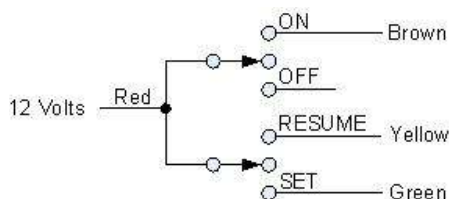
You will need a standard relay because we have LED lights. I wired mine as follows.

87 & 86 to the yellow brake light  
87a & 85 to ground  
30 to the violet coming from the servo.

You will also need to wire in the signal splitter  
Red wire - to the battery or Acc (I used the Acc)  
Green wire - to the VSS in or white wire  
Yellow wire- VSS out or to the gray Rostra wire  
Black wire - to ground



Here's a (we think) schematic of the Control Switch

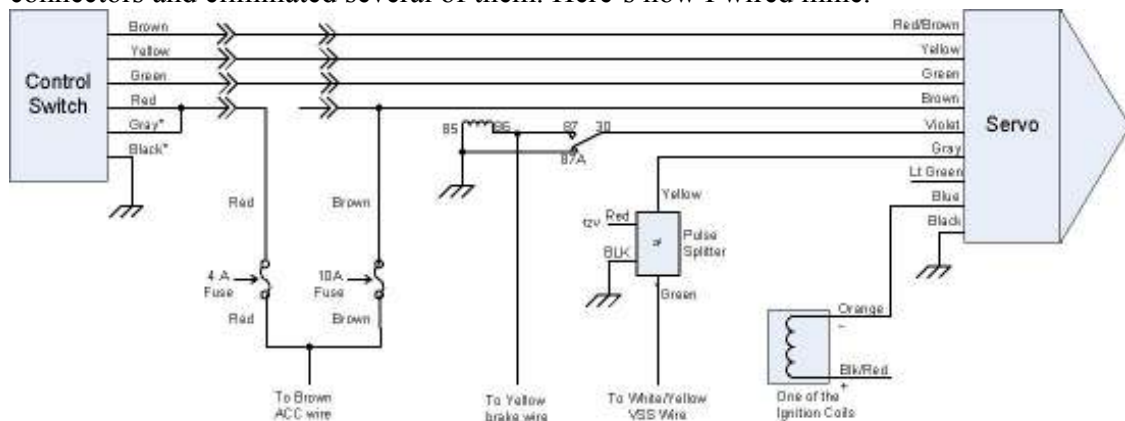


Ignore the vacuum cannister in the following picture. It is only needed when the CCS-100 vacuum model is used. The Rostra does not require vacuum.



Here are some changes and inputs from Jack.

I wired mine somewhat differently. The Rostra documentation is pretty confusing and the copy of the manual they supplied was difficult to read. I didn't like all the different connectors and eliminated several of them. Here's how I wired mine.



\* Used on the lighted switch only. Not present on the unlighted switch.

The Lt Blue and Black pair, the Lt Green wire, and the Orange wire are not used.