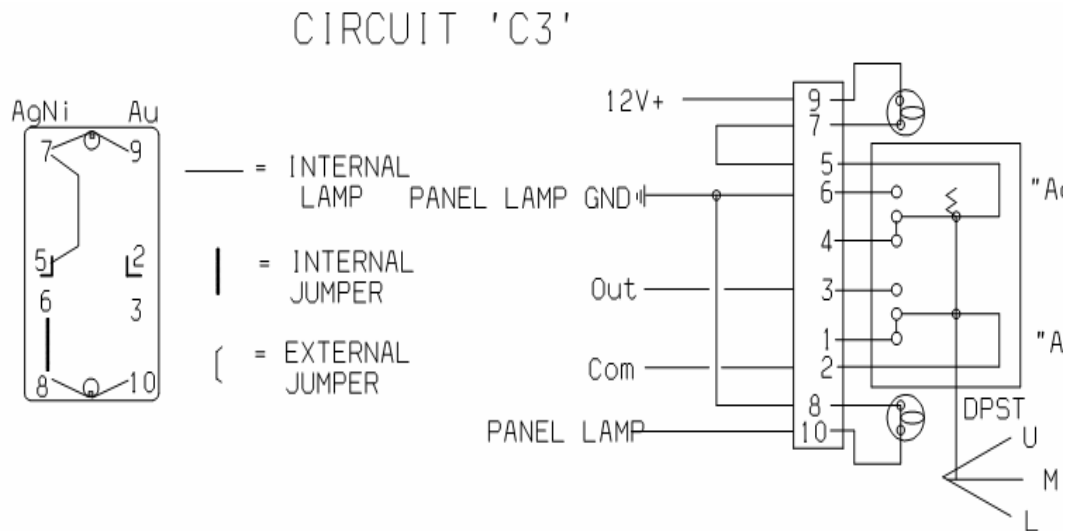


# Installing BrakeSwitch on a Freightliner Custom Chassis

## >>> A Crusingator Document <<<

The basic installation of a BrakeSwitch on a Freightliner Custom RV Chassis is simple if you follow one rule. You must decide which wire to cut and splice the BrakeSwitch into. **FREIGHTLINER SINGLE STAGE** engine braking or exhaust braking switches are DPST (Double Pole Single Throw) switches. Below is an example of a DPST switch. Freightliner uses a paddle switch # A06-30769-072 in its ON OFF engine brake circuit "C3". While they use a rocker switch # A06-30769-119 in their ON OFF exhaust brake circuit "C3". Both switches are electrically the same.



The decision must be made to cut the wire to the ground circuit OR the wire to the ECU (Engine Control Unit) circuit. Electrically it does not matter. Freightliner installs a manual switch (the ONLY way to turn it ON or OFF is for the operator to physically move it from one position to the other, ON or OFF). Now, what we desire to do is to AUTOMATE this circuit. When the chassis leaves the Freightliner chassis plant, it is wired to respond in the following fashion. When the switch is OFF, there is NO ACTIVATION of the Engine or Exhaust braking, when the BRAKE pedal is depressed. While when the switch is ON, when your foot is removed from the THROTTLE pedal, the Engine Brake or Exhaust Brake is ACTIVATED. This happens even when you do not desire it to ACTIVATE. There is NO coast mode programmed into the system. When you have the coach cruise control set, everything is fine, until your coach is going downhill and it is gaining speed at 3 to 5 MPH over the cruise control set speed, the engine brake or exhaust brake is ACTIVATED to slow you down. This is the time where you say not so nice words. **YOU THEN, TURN THE SWITCH TO THE OFF POSITION. AND NOW YOUR COACH HAS LESS AVAILABLE BRAKING!!!**

Back to the decision, do I cut the wire to the ground or the wire to the ECU? Again in this case it does not matter in a single stage braking circuit. In the past I have cut the ECU wire and installed the BrakeSwitch in that wire. More recently, I have decided to cut the ground wire instead. By cutting the wire to the ground circuit I am making it easier to use the same wiring scheme when wiring a BrakeSwitch into a two stage engine brake circuit or a two stage engine/exhaust brake circuit. It is now time to locate the document titled "**Freightliner Circuit - C3**". This is the above circuit with the pin connections labeled and the circuits to which the pins are connected. Having made the decision to cut the ground wire labeled, Circuit # 1204, I locate this **BLACK** insulated wire which goes to the harness, Pin **2B**. The BrakeSwitch device has six wires attached. The **PURPLE** wire is used to activate the switch. The **BLACK** wire is connected to a good chassis ground (I recommend the ground lug on the coach's firewall) both **WHITE** wires are one circuit and the second pair, **RED** wires are a second circuit) in more recent chassis years the second pair is not necessary, I just tape them off and forget them. Using a Tiffin Phaeton as an example, it is now time to access the brake switch wiring. On a Tiffin that wiring is under the driver's side console. Remove most of the screws securing the panel should allow access. You should be able to remove the harness from the back of the switch. Pull the harness out of the console where you can see to work on it. Looking at the pin connections on the document "**Freightliner Circuit - C3**", find the Black wire going to pin **2B** this is the wire to cut. Leave about three inches of wire between the end of the harness and where you are going to cut. Cut the wire (Ground, Ckt # 1204), splice one of the BrakeSwitch **WHITE** wires to each of the two ends of the wire you just cut (Ground, Ckt #1204). Now take the **BLACK** BrakeSwitch wire to the firewall ground lug. I saved the best for last, locating the proper wire in which to connect the **PURPLE** BrakeSwitch wire. That wire can be found in several places. One is under the dash behind the steering column, or running up the steering column and a third place is under the stack of drawers on the Tiffin coaches. You need to find wire number **36E**, 36 will not work, nor will 36G or 36G\*. It has got to be **36E**, when you find the correct wire, tap into it using a tap connector. When you have made all of the above connections, your engine brake or exhaust brake is now really **AUTOMATED**. Turn that switch ON and forget about it until you are driving in hazardous icy or slick conditions. At that point it is recommended that you turn OFF the Freightliner engine brake or exhaust brake switch. **NOW**, when you remove your foot from the throttle pedal the coach will **COAST**. When in cruise control going downhill gaining speed, the coach will **COAST**. When you desire braking, depress the brake pedal. Not only will you get the service brakes you will also get the **ACTIVATION** of the engine/exhaust brake.