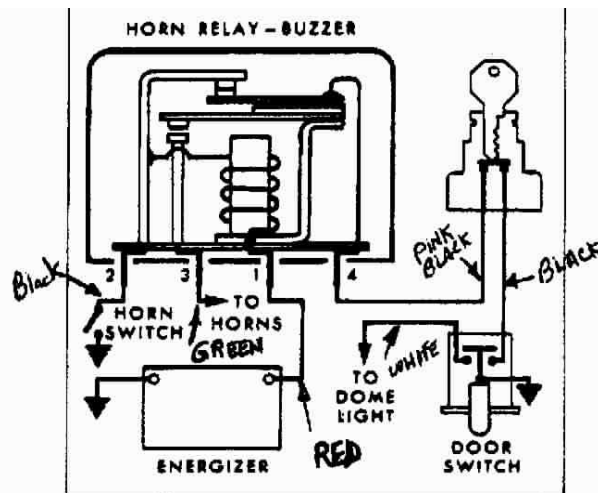


HORN OPERATION DIAGNOSIS - ALL C3 CORVETTES 1969 THROUGH 1982

There are three basic areas that can cause your horns to not operate: 1) the horns themselves; 2) the horn relay/key buzzer; 3) the horn circuit in the steering column and steering wheel parts.

- 1) **Horns** - There are two horns on most Corvettes. There is a dark green 14 gage wire connected to them from the horn relay. Disconnect this wire from the horns and connect a 12v source to the horns; they should operate. If they don't, the horns need to be repaired or replaced.
- 2) **Horn Relay/Key Buzzer** – Early Corvettes have the horn relay mounted underhood, on the driver's inner fender, near the brake master cylinder. Later models have the horn relay mounted inside the car, under the dash on the instrument panel wiring harness coming out of the fuse panel.
Remove the relay from its mounting and identify the #2 and #3 terminals. Connect a jumper from the terminal marked #2 to ground. Slide a probe into the wiring harness connector to make contact if the terminals are the slip-on type. If the horns operate, check the #2 terminal wire and horn switch for defects. If the horns do not operate, leave the #2 terminal connected to ground, and connect a voltmeter from the #3 terminal to ground. If a reading is obtained, check the horn wiring and horns for defects. If no reading is obtained, replace the horn relay/buzzer.



Horn Relay/Key Buzzer Schematic

- 3) **Steering Column Wiring** - The steering column has a flat (harmonica) wiring connector that connects it to the vehicle instrument panel electrical harness. The last wire in the steering column connector is a black one. Next to it is a pink wire. The next wire (the third one) is another black wire. There should be continuity from that third black wire up to the spring loaded eyelet plunger sticking up at the horn button upper contact on the steering wheel. If not, the problem is within the steering column itself.
- 4) **Steering Column Continuity** - When you press the horn button there should be continuity from the third wire all the way to the lower end of the steering column steering shaft and across the flexible coupling to the flange that mounts to the steering gear input shaft. If not, the problem is somewhere within the steering column, flexible coupling, or steering wheel horn parts themselves.

Tilt & Telescoping Steering Column Horn Ground Components

The following description is valid for all Corvette T&T steering columns from 1969 through 1982. It is most helpful if you would download the following pictures from the host website to assist with the description. Download:

Tilt & Telescoping Column 69-76 Blowup Pic

Tilt & Telescoping Column 77-82 Steering Wheel and Horn Parts (the 1969 through 76 steering wheels are similar - this is the best picture showing all the parts!)

As described on the previous page, to operate the horn you need to create continuity from the black wire entering the steering column to the end of the steering shaft.

Please refer to the T&T Column Blowup Pic. The third black wire comes up the steering column wiring harness to the Turn Signal Switch #7. The wire is connected to the spring loaded plunger that is part of the Turn Signal Switch. The plunger is stationary and rests against a rotating contact strip that is part of the Horn Contact Carrier #4. This Carrier is also the turn signal canceling cam. The Carrier fits against the Lock Plate #3 and has three insulated pads that extend up and through three cutouts in the Lock Plate. The "C" Ring Retainer #1 fits against the Lock Plate and insulates it (this part is very important to prevent metal parts from touching each other and causing the horn to blow all the time).

Now refer to the Steering Wheel and Horn Parts Pic. The large spring on the bottom side of the Contact Asm Lwr #1 rests against the three pads that are part of the Horn Contact Carrier. (As mentioned above, the Retainer prevents the spring from touching any other metal parts.) The Contact Asm Lwr has a plastic tower that extends up through the Hub Asm. The tower incorporates a Spring #2, an Eyelet #3, and is retained inside the tower by Insulator #4. The eyelet extends up through the steering wheel hub and rests against a stamped leg that is part of Contact Asm Upr #7.

Now when the Horn Cap (#9, 10, 11) is depressed, the Contact Asm Upr is closed and there is now a ground path that extends down through the Mounting Screws #8, down through the hub, into the steering column steering shaft, down through the flexible coupling, into the steering gear, through the steering gear mounting bolts, into the frame and back to the battery through the vehicle ground straps.

If you press the horn cap and there is a lack of continuity from the third wire all the way to the flexible coupling flange that attaches to the gear input shaft, you need to look for missing, corroded, or broken parts (Bubba strikes again!). Also, remember that your steering column is 20 to 30 years old, there could be corrosion at some of your steering column component interfaces which could be interrupting the ground path.

Also your OEM flexible coupling has a ground wire, strap, or inlaid screen that provides a grounding path from the steering column to the steering gear. Some replacement units and most rebuild flex coupling "kits" do not provide a ground path. This could be the reason why your horn suddenly stops working.

Standard (Non-Adjustable) Steering Column

Common Problem – Horn Continues to Blow

The C3 standard column from 1969 through 1976 has the turn signal lever attached to the steering column switch by a single screw. This screw can loosen and back out and ground the horn circuit. You will need to remove the steering wheel and hub. Rotate the steering column so that a hole in the locking plate aligns with the turn signal lever screw. Retighten it.

Horn Ground Components

The following description is valid for all Corvette standard steering columns from 1969 through 1979. It is most helpful if you would download the following pictures from the host website to assist with the description. Download:

Std Column Blowup Pic

Std Column 69-75 Steering Wheel and Horn Parts #1 & #2 or

Std Column 76-79 Steering Wheel and Horn Parts

Please refer to the Std Column Blowup Pic. The third black wire comes up the steering column wiring harness to the Turn Signal Switch Assy #8. The wire is connected to the spring loaded plunger that is part of the Turn Signal Switch Assy. The plunger is stationary and rests against a rotating contact strip that is part of the Cancelling Cam Assy #5. The Cam Assy fits against the Strg Shaft Lock Plate #4 and it has a tower that extends up through a cutout in the Strg Shaft Lock Plate.

Now refer to the Steering Wheel and Horn Parts Pic. The tower on the Cam Assy continues up and extends through the steering wheel hub. The hub can be a separate unit from the steering wheel (1969 through 75) or it can be integral to the steering wheel (1976 through 79). The tower incorporates a Spring, an Eyelet, and is retained inside the tower by an Insulator. The Eyelet extends up through a hole in the steering wheel hub and rests against a contact that is right under the horn cap and retainer.

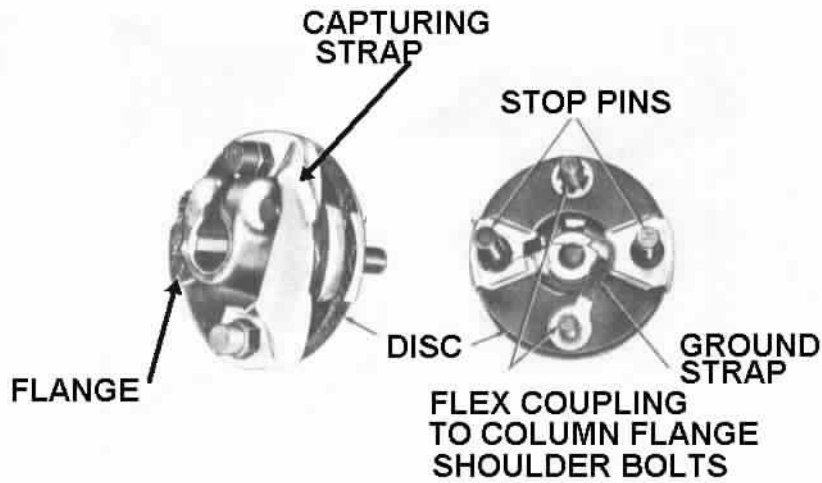
1969 through 75 Steering Wheel When the Horn Cap (parts #1, #2, & #3) is depressed, there is a separate Contact Assy #5 that is closed. There is now a ground path that extends down through the Mounting Screws #4, down through the hub, into the steering column steering shaft, down through the flexible coupling, into the steering gear, through the steering gear mounting bolts, into the frame and back to the battery through the vehicle ground straps.

1976 through 79 Steering Wheel When the Horn Cap (Emblem, Cap, Retainer) is depressed, there is an internal contact in the Steering Wheel Asm #1 that is closed. The ground path then extends back to the vehicle battery as described above.

If you press the horn cap and there is a lack of continuity from the third wire all the way to the flexible coupling flange that attaches to the gear input shaft, you need to look for missing, corroded, or broken parts (Bubba strikes again!). Also, remember that your steering column is 20 to 30 years old, there could be corrosion at some of your steering column component interfaces which could be interrupting the ground path.

Flexible Coupling

The OEM flexible coupling has a ground wire, strap, or inlaid screen that provides a grounding path from the steering column, through the flexible coupling, to the steering gear. Some replacement units and most rebuild flex coupling “kits” do not provide a ground path. This could be the reason why your horn suddenly stops working.



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