1964 - 1965

Continental Convertible

Rear Window Operation

Description & Trouble Shooting

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1964-1965 CONTINENTAL CONVERTIBLE REAR WINDOW OPERATION:

DESCRIPTION AND TROUBLESHOOTING

How To Use This Print:

Understanding how your Lincoln rear windows operate and what each component does will make it easier to troubleshoot problems. Get to understand the operation before doing anything else. The following format is recommended.

1. Read the notes.
2. Memorize the legend.
3. Spend about two minutes familiarizing yourself with the print. Learn where each component is on the print.
4. Read description of manual operation (using pushbuttons) and follow each step of the print. Go one step at a time.
5. Read description of automatic operation (opening and closing the rear door), again following each step on the print.
6. Do steps 4 and 5 until you can make the print work without reading the description.
7. Locate the components in your car.

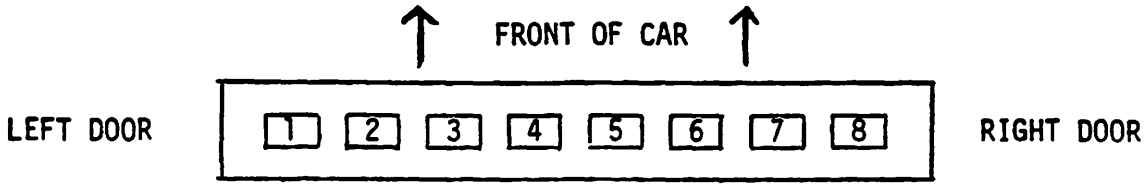
How To Use Troubleshooting Guide:

Only two "tools" are needed: something to check the presence of 12 volts and something to check continuity (is point A connected to point B?). A Volt-ohm meter will do both these jobs. A test light will find 12V. A self-powered test light will check continuity. A battery powered dwell meter will also check continuity.

Hints:

1. If you want to make a rear window go up with the door open, take a large pair of pliers and close (2 CLICKS) door latch mechanism on front of door. This will make the door think it is closed.
2. If trying to determine if a relay is at fault in the trunk, take the plug off that relay and put it on the corresponding relay for the other side.

3. Relays in the trunk are positioned as follows.



1. Current limiter
2. Up
3. Down
4. Current sensing (lockout)
5. Current sensing (lockout)
6. Down
7. Up
8. Current limiter

4. Often it is possible to repair a faulty relay by bending back the tabs and removing the metal cover. A broken wire can be soldered or bad contacts filed.

NOTES:

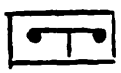
1. This print is for the left rear door. The right door is the same except for some of the wire colors, which are printed in brackets (RED) for the right door.

2. This print is shown with everything de-energized, as if the battery were out of the car.

3. Relay operation: A relay is an electrically operated switch. Current flowing through a relay coil creates a magnetic field which opens or closes the contacts within the relay. A relay contact is shown to be open like this ⊣⊢ . In this state current cannot flow, the switch is open. Closed contacts ⊣⊬ do allow current to flow. The switch is on.

4. Operation of the current limiter: The current limiter is a relay, but it energizes only when excessive current flows through its coil. Normal motor current flowing through this coil is not enough to cause it to energize.

LEGEND:

1.  = Relay coil
2. = Dotted line = mechanical connection
3.  = Relay contacts (OPEN with relay DE-ENERGIZED)
4.  = Relay contacts (SHUT with relay DE-ENERGIZED)
5.  = 12 Volt supply
6.  = Switch
7.  = Switch (closed)
8.  = Switch (open)
9.  = Ground

PURPOSE OF COMPONENTS:

1. Current sensing (lockout) relay: The sole purpose of this relay is to prohibit the down relay energizing when the rear door switch is in the up position.

2. Limit Switch:

   A. DOWN STOP SECTION: Stops automatic down travel when window is down 6 inches.

   B. UP CUT OFF: Open when window is greater than 7 inches down. This is to insure that if the rear glass is fully down, shutting the door will not cause it to go up.

3. Actuator (striker) Switch: Tells circuitry if door is open or shut.

LOCATION OF COMPONENTS:

1. Up relay, down relay, current limiter and current sensing relay: In trunk, about 3 inches from back seat, behind an unpainted metal cover.

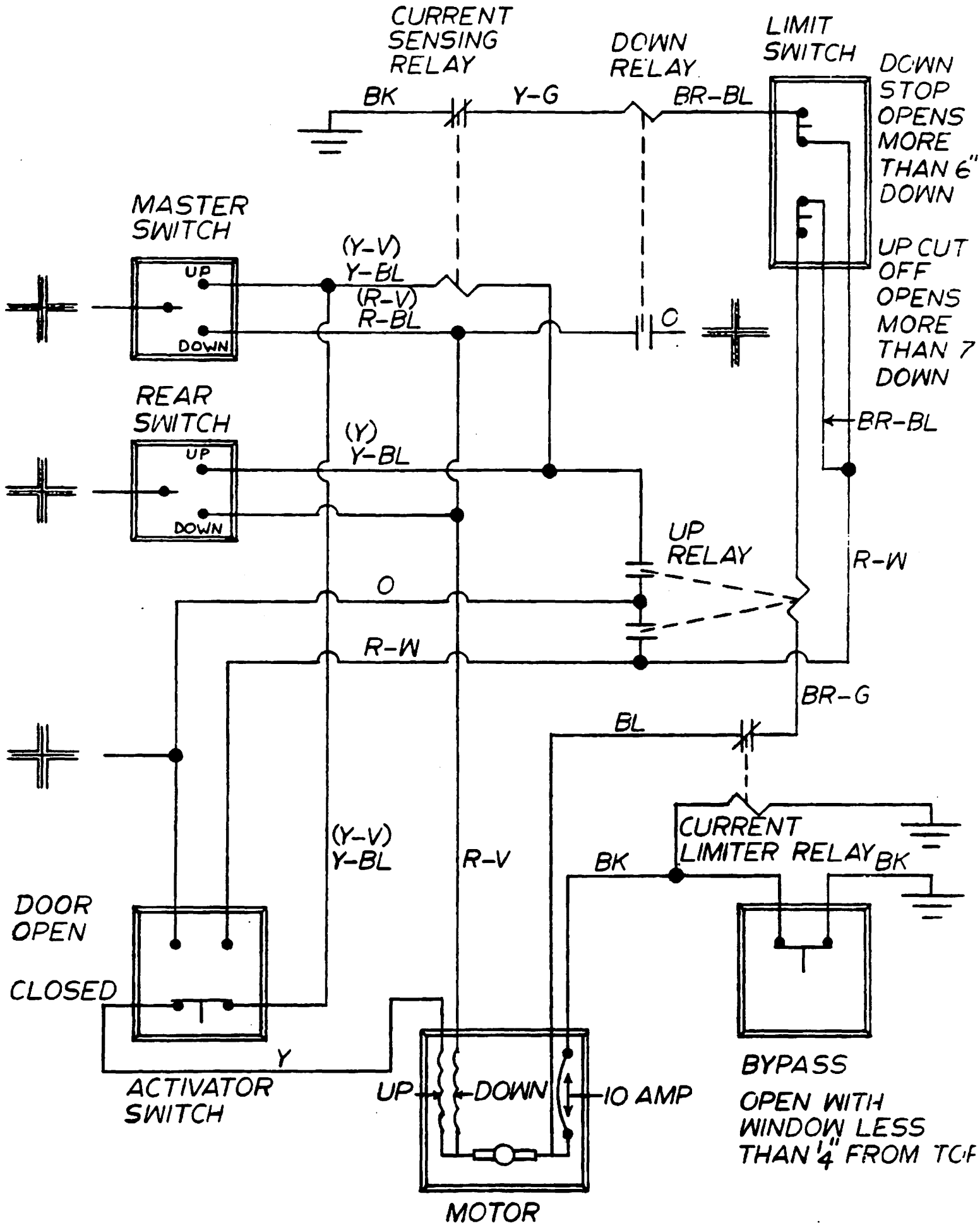
2. Actuator switch: In door, just above door latch mechanism.

3. Limit switch: In door, access through small panel at top of door's leading edge.

4. Bypass switch: Bolted onto limit switch.

COLOR CODE:

O	orange	Y	yellow	BL	blue
R	red	V	violet	BK	black
W	white	G	green	BR	brown


CURRENT SENSING RELAY
DOWN RELAY
LIMIT SWITCH
BK
Y-G
BR-BL
DOWN STOP OPENS MORE THAN 6" DOWN
UP CUT OFF OPENS MORE THAN 7 DOWN
MASTER SWITCH
UP
DOWN
(Y-V)
Y-BL
(R-V)
R-BL
C
REAR SWITCH
(Y)
Y-BL
BR-BL
UP RELAY
R-W
O
R-W
BR-G
BL
CURRENT LIMITER RELAY
BK
BK
(Y-V)
Y-BL
R-V
DOOR OPEN
CLOSED
Y
ACTIVATOR SWITCH
UP
DOWN
10 AMP
MOTOR
BYPASS
OPEN WITH WINDOW LESS THAN 1/4" FROM TOP

DESCRIPTION OF OPERATION:

Manual Operation (Using Pushbutton)

I. Down, with either switch. +12V on red-violet to down field of motor, thru armature and to ground on black, either thru bypass switch or current limiter relay coil. The down relay is not used.

II. Up: +12V on up side of either switch to yellow-blue into window actuator switch. If the door is closed these switch contacts are closed, allowing current to the up motor field on the yellow wire. Current will flow thru the armature to ground via the bypass switch or the current limiter relay.

Automatic Operation (Opening and Shutting Door)

I. Opening door (window to go down)

A: Window actuator switch moves to position opposite that shown on print. This allows 12V thru actuator switch to the red-white wire, thru the closed down stop switch, thru the down relay coil, thru the normally closed current sensing relay contacts, to ground. The down relay is now energized.

B: The normally open down relay contacts are now shut. This allows 12V to the down field of the motor, and to ground thru the bypass switch or the current limiter relay coil.

C: When the window is six inches down the limit switch (DOWN STOP) opens. The down relay coil no longer has 12V, it de-energizes, and all motion stops.

D: When the door is opened and the window comes down, current flows thru the window actuator switch to the red-white wire, thru the window up cut off switch, down thru the up relay coil, thru the normally closed current limiter relay contacts, thru the motor and to ground thru the bypass switch. This energizes the up relay.

E: For the window to rise when the door is shut, the up relay must remain energized regardless of the position of the window actuator switch. Now that the up relay is energized and its contacts have closed, the relay is held energized by +12V on the orange wire, down thru the lower up relay contacts to the red-white, thru the window up cut off switch, thru the up relay coil and to ground thru the current limiter contacts, motor and bypass switch.

F: With the door open and the up relay energized the window will not rise because the window actuator switch contacts are in the wrong position, not allowing current to the up field winding of the motor.

II. Closing Door (window to go up)

A: The up relay is already energized. This means that 12V is present from above the window actuator switch, up the orange wire, thru the top up relay contacts, thru the current sensing relay coil, and down the yellow-blue to the actuator switch.

B: Closing the door closes the actuator switch, and the contacts are as shown on the print. The up field is now completed, with current flowing thru the yellow wire, up field, and the motor to ground.

C: When the window is 1/4 inch from the top the bypass switch opens. Now all current thru the motor must pass thru the current limiter relay coil to get to ground.

D: When the window reaches the top and starts to bind, the motor current becomes sufficient to energize the current limiter relay which causes its contacts to open. This causes the up relay to de-energize, causing all motion to stop.

E: As soon as the up relay de-energizes and the motor stops, the current limiter relay de-energizes. Now everything is as it appears on the print, except the bypass switch is open.

COMMON PROBLEMS AND TROUBLESHOOTING PROCEDURES

SYMPTOM: Window will not go down with switch or in auto.

PROCEDURE: Check for 12V on red-violet wire into motor with either switch in down position. Key must be on.

1. Voltage not present: Problem is in wire between switch and motor, or there is no power to the switch. Check as one would any power window.

2. Voltage is present: Ground the black wire coming out of the motor. If the motor does operate, the current limiter relay or the wires to it are at fault. Ground the black wire going into the current limiter. If window goes down replace the current limiter. If the window does not go down, change the motor. Make sure window is not mechanically bound in the track.

3. Remember, the down relay is not used when using down buttons.

HINT: If courtesy lights dim or ampmeter moves to left when button is pushed, this means current path is okay, and trouble is most likely mechanical, such as a bound regulator or channel.

SYMPTOM: Window will not go up with switch or in auto.

PROCEDURES:

1. The door must be closed for a window to go up.

2. With either switch in the up position (key on) check for 12V on the yellow-blue wire into the window actuator switch.

3. If 12V not present, problem is in this wire or there is no 12V to the switches.

4. If 12V is present on the yellow-blue, unplug the window actuator switch and jumper this wire to the yellow wire in the same plug. Do not use that half of the plug that is connected to the switch itself.

5. If window will now go up with button pushed, replace or adjust actuator switch. The switch can be screwed up or down for better contact with the door latch assembly.

6. If window will still not go up check for 12V on yellow wire into the motor. If 12V not present trouble is in yellow wire to actuator switch.

7. If 12V present ground black wire out of motor. If the motor operates the current limiter relay, or the wires to it are at fault. Ground the black wire going into the current limiter. If window goes up replace or repair current limiter. If window does not go up replace motor and check for window mechanically bound in track.

SYMPTOM: Window will go up with master switch, will not go up with rear door switch or upon closing that door.

PROCEDURE:

1. Trouble is in current sensing relay, or in wires to it.
2. Check plug on current sensing relay.
3. With rear door button in up position (key on, door shut) pull plug off relay to see if it clicks as it de-energizes. No click, replace relay.

SYMPTOM: Window does not drop when door is opened, will go down with switch.

PROCEDURE:

1. Remove access plate on leading edge of door and check for 12V on red-white wire at plug of limit switch.
2. If 12V not present, remove door panel and check for 12V on orange wire into window actuator switch. If 12V present, adjust or replace actuator switch. If 12V not present, trouble is in wiring harness.
3. If 12V is present on red-white wire into limit switch check for 12V on brown-blue wire into down relay.

   A: If 12V not present window down stop switch (part of limit switch) is not operating and the limit switch must be replaced), or its arm has slipped off the window.

   B: If 12V is present, pull the plug off the down relay and listen that the relay makes a click as it de-energizes.

   C: If relay does not click ground yellow-green wire out of relay (with plug on relay). If relay does not click relay is no good.

   D: If relay does click check for 12V on the red-blue wire coming out of the down relay, with the plug on. If 12V not present, replace down relay. If 12V is present and window goes down, replace current sensing relay.

SYMPTOM: Window will not raise when door is shut, will raise with switch.

PROCEDURE:

1. With door open, pull plug off up relay and listen for relay to click as it de-energizes. If relay does not click check for 12V on green wire in plug.

   A: If 12V present, ground brown wire of relay, with plug in place. Relay should click. If not, replace relay. If relay does click, replace current limiter relay.

   B: If 12V not present on green wire into up relay, check for 12V into red-white wire into limit switch.

      (1) If 12V present, check to see if limit switch arm is riding on window. If so, replace limit switch.

      (2) If 12V not present, replace or adjust actuator switch.

2. If, when pulling the plug off up relay in step one the relay clicks as it de-energizes check for 12V on yellow-blue out of relay, with plug on. If 12V not present, replace up relay.

3. If steps 1 and 2 check out okay, check for 12V on the yellow-blue into the actuator switch. If 12V not present, replace current sensing relay.