

## 1964-1966 Thunderbird Convertible Top Controller Installation

### MINIMUM REQUIRED TOOLS

- 1/2" wrench
- 3/8" nut driver or wrench
- 11/32" nut driver or wrench
- slotted screwdriver

### INSTALLATION

- 1) Start by opening trunk. If existing relays are sufficiently operable, press the top up/down switch until deck lid is fully raised. If system is inoperable, unbolt the deck lid locks through the wheel wells, unbolt the deck lid rams from under the rear of the trunk, and manually lift the deck lid. Ensure it is braced securely.
- 2) Disconnect the battery (1/2" wrench). Always disconnect the negative lead first.
- 3) Unplug the top harness from all eight relays.
- 4) Unscrew the 12V supply wire from each relay bank.
- 5) Remove screws holding relay bank mounting plates to the vehicle's body (3/8" wrench — keep these screws, you will need them for re-installation). Remove both relay banks.
- 6) Remove all relays from the mounting plates.
- 7) Mount a relay replacement PCB (printed circuit board) to each mounting plate. Insert 6-32x1-1/2" screws up through the bottom of the mounting plate, through the standoffs, and into the threaded inserts in the PCB assembly. Note that these screws provide a low current ground path for the board so they must be secure for proper operation. Do not overtighten. See figures 1 and 2, below.
- 8) Ensure a 50A fuse is seated on each PCB.
- 9) Re-install the mounting plates. Orient the PCBs so the switches face the rear of the vehicle. Secure the mounting plates with the original screws.
- 10) Attach the 12V supply wires to the screw terminals on the PCBs. Ensure the lugs are securely attached — all of the current which drives the top pump, solenoid valves, and motors flows through these connections.
- 11) Plug the top harness into the quick disconnect terminals on the top of each PCB. The terminals are positioned where the relays had been so the cables should naturally reach to the appropriate locations. See figure 3, below.
- 12) Route the two RJ45 (Ethernet) cables from the PCBs to under the rear seat or some other conveniently accessible location. Plug the red cable into the left (driver's side) PCB, plug the green cable into the right (passenger side) PCB.
- 13) Plug the other end of the RJ45 cables into the remote control PCB. Plug the red cable into the left jack. Plug the green cable into the right jack.

### TESTING

- 1) Reconnect the battery. Nothing should activate as the battery is connected; if anything does click or move immediately disconnect the battery and find the fault.
- 2) The remote has buttons to manually operate each of the eight relay functions. Next to each button is an LED which lights when that relay is activated, either by the button or by the vehicle's harness. Be very careful when operating the relays manually as the system does not prevent mechanical or electrical collisions. Never press more than one of top up, top down, deck up, or deck down at the same time as this will cause both sides of the pump to be energized simultaneously or operate all solenoid valves at once which may cause damage. Likewise never press panel extend and panel retract or lock and unlock at the same time as this will power both sides of the respective motors. Also, note that the system does not prevent operating the various elements beyond their limit switches which can cause mechanical damage. Always be aware of how the mechanical elements are

moving and be prepared to release all buttons if anything is at risk of exceeding its intended mechanical range.

- 3) Start by testing the deck lid locks. The deck lid Lock and Unlock buttons should cause the locks to spin appropriately. Never press both buttons simultaneously.
- 4) Alternately press Deck Up and Deck Down to ensure the deck lid moves correctly. This tests both the pump and the associated solenoid valves. Leave the deck lid in the full up position. Never press both buttons simultaneously.
- 5) Alternately press Panel Extend and Panel Retract to move the tonneau panel out and back in. Leave in the extended position. Never press both buttons simultaneously.
- 6) Press the Top Up button to raise the top. Press the Top Down button to lower the top. This tests both the pump and the appropriate solenoid valves. Never press both buttons simultaneously.
- 7) Operate the system with the top up/down switch on the vehicle's center console. The LEDs on the remote should indicate which relays the system is activating. This can be useful for diagnosing issues with limit switches.
- 8) Always unplug the remote when not in use to avoid accidental operation. Stow the ends of the RJ45 cables under the seat.

#### **LEFT (DRIVER'S SIDE) RELAYS**

- 1) Deck Lock
- 2) Deck Unlock
- 3) Deck Down
- 4) Deck Up

#### **RIGHT (PASSENGER SIDE) RELAYS**

- 1) Panel Retract
- 2) Panel Extend
- 3) Top Up
- 4) Top Down

#### **SEQUENCE (from closed and locked, top up)**

- 1) Deck Unlock and Deck Up until deck is fully raised
- 2) Panel Extend until panel is fully extended
- 3) Top Down until top is fully stowed in trunk
- 4) Deck Lock and Deck Down until deck is fully closed and locked

#### **SEQUENCE (from closed and locked, top down)**

- 1) Deck Unlock and Deck Up until deck lid is full raised
- 2) Top Up until top is fully raised
- 3) Panel Retract until panel is fully retracted
- 4) Deck Lock and Deck Down until deck is fully closed and locked

Figure 1: One relay bank set, all fasteners, and the vehicle's original relay mounting plate

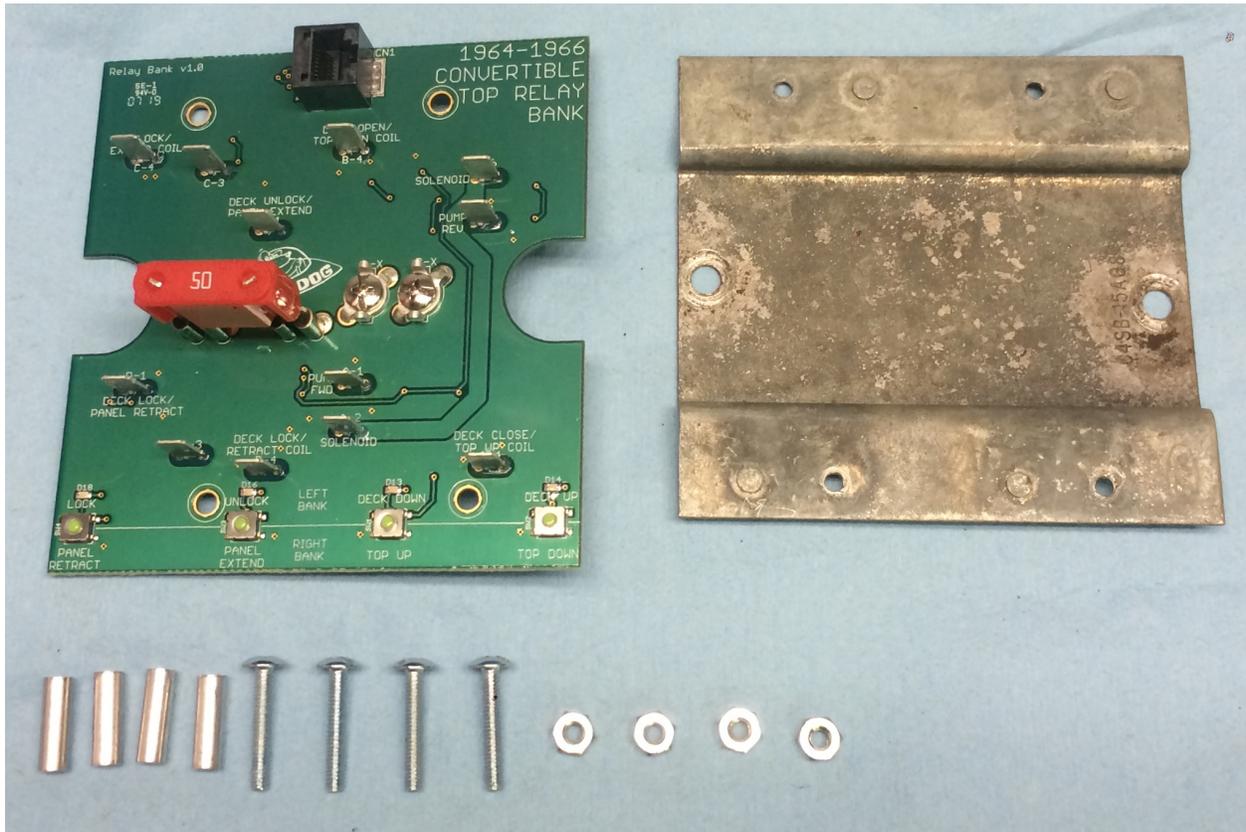


Figure 2: Edge view showing full installation of PCB on mounting plate. Note correct orientation of mounting plate.

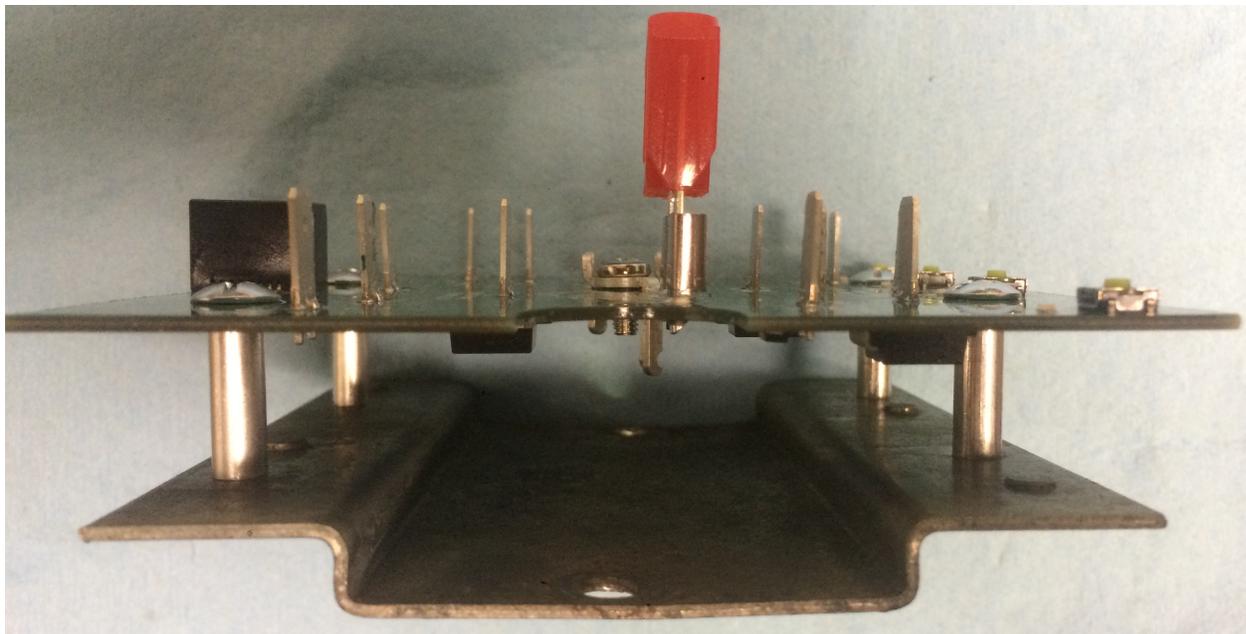


Figure 3: Fully installed and connected assembly on left (driver's) side of trunk.

