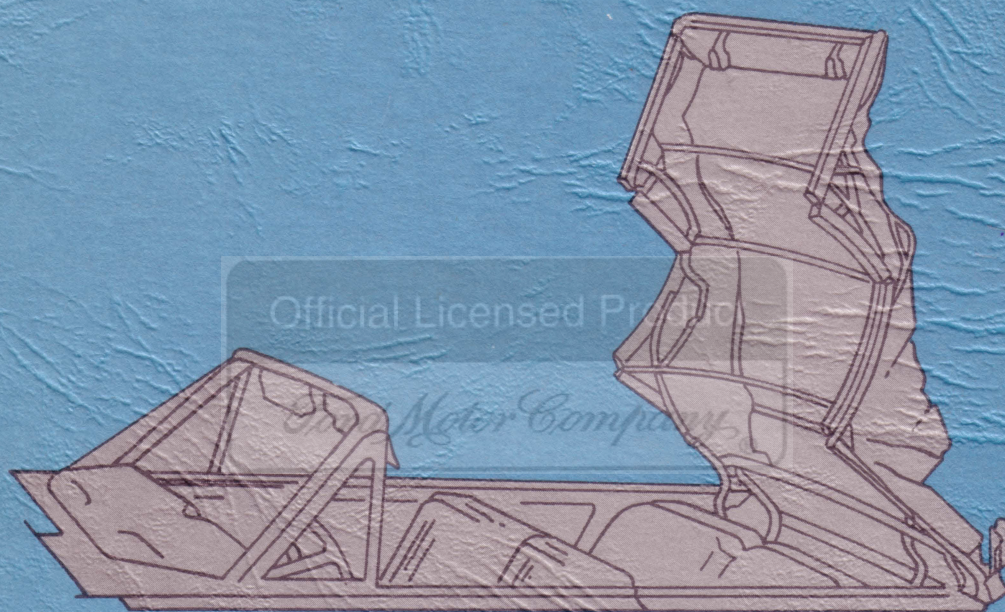


FORD *Service Handbook*

20801



CONVERTIBLE TOPS

DIAGNOSIS, ADJUSTMENTS AND LIGHT REPAIR

LINCOLN CONTINENTAL • THUNDERBIRD
GALAXIE • MONTEREY • FALCON • COMET

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The descriptions and specifications in this handbook were in effect at the time the handbook was approved for printing. Ford Division of Ford Motor Company reserves the right to discontinue models at any time, or change specifications or design, without notice and without incurring obligation.

**SERVICE DEPARTMENT
FORD DIVISION**



MOTOR COMPANY

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PART 1

IDENTIFICATION

1 GENERAL INFORMATION

This Service Handbook covers the diagnosis, adjustments and light repair procedures on convertible tops for Lincoln Continental, Thunderbird, Galaxie, Monterey, Falcon and Comet. This part contains information of a general nature to inform service technicians of the major similarities and differences between the above makes of convertible tops.

The illustration below (Fig. 1-1) shows the Lincoln Continental convertible top. Figure 1-2 illustrates the weatherstrip and mouldings while Fig. 1-3 shows the Lincoln Continental linkage exploded view.

Figures 1-4 and 1-5 show the Thunderbird convertible top along with an illustration of the linkage and weatherstrip.

In addition, this part of the Handbook includes an exploded view of the linkage for the Galaxie and Monterey convertibles. It will be noted that this same illustration is being shown as typical for Falcon and Comet. This is due to the fact that Galaxie and Monterey or Falcon and Comet convertible tops are similar in construction and operation.

The basic difference is in over-all size of parts. With the exception of

the location of the top control switch on the instrument panel, the electrical circuits are the same, including wiring color code. (Fig. 1-6, 1-7).

Figure 1-8 shows the difference between the header dowel and dowel striker plate adjustment between the Galaxie-Monterey and Falcon-Comet convertible tops.

On Galaxie-Monterey cars, the dowel is adjustable while the dowel striker plate is *not* adjustable. On Falcon-Comet cars, the dowel is *not* adjustable while the dowel hold-down plate *is* adjustable.

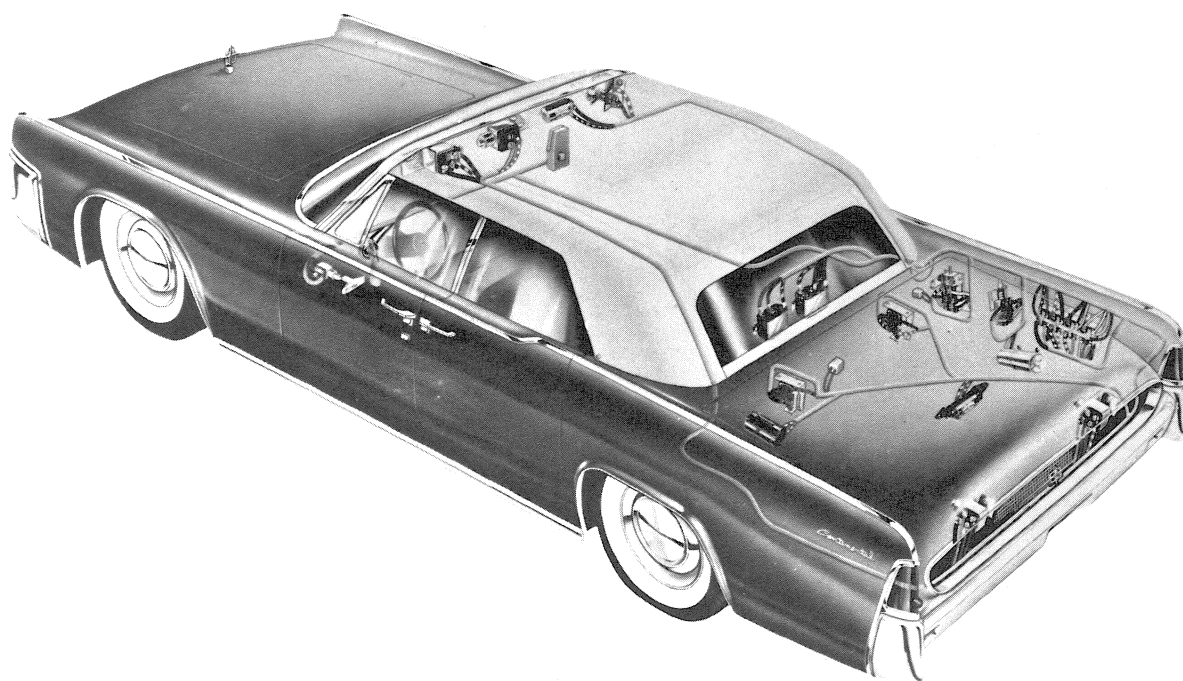


FIG. 1-1—Lincoln Continental

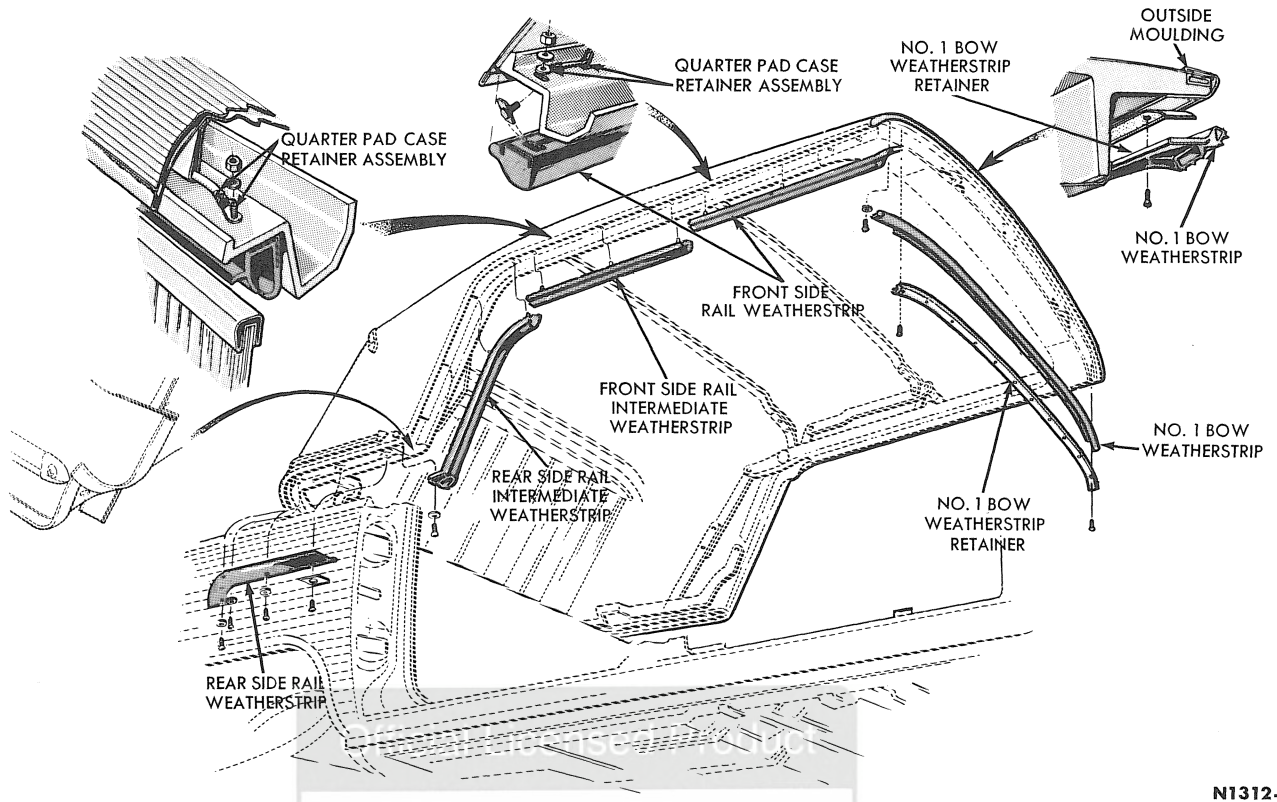


FIG. 1-2—Lincoln Continental Weatherstrips and Mouldings

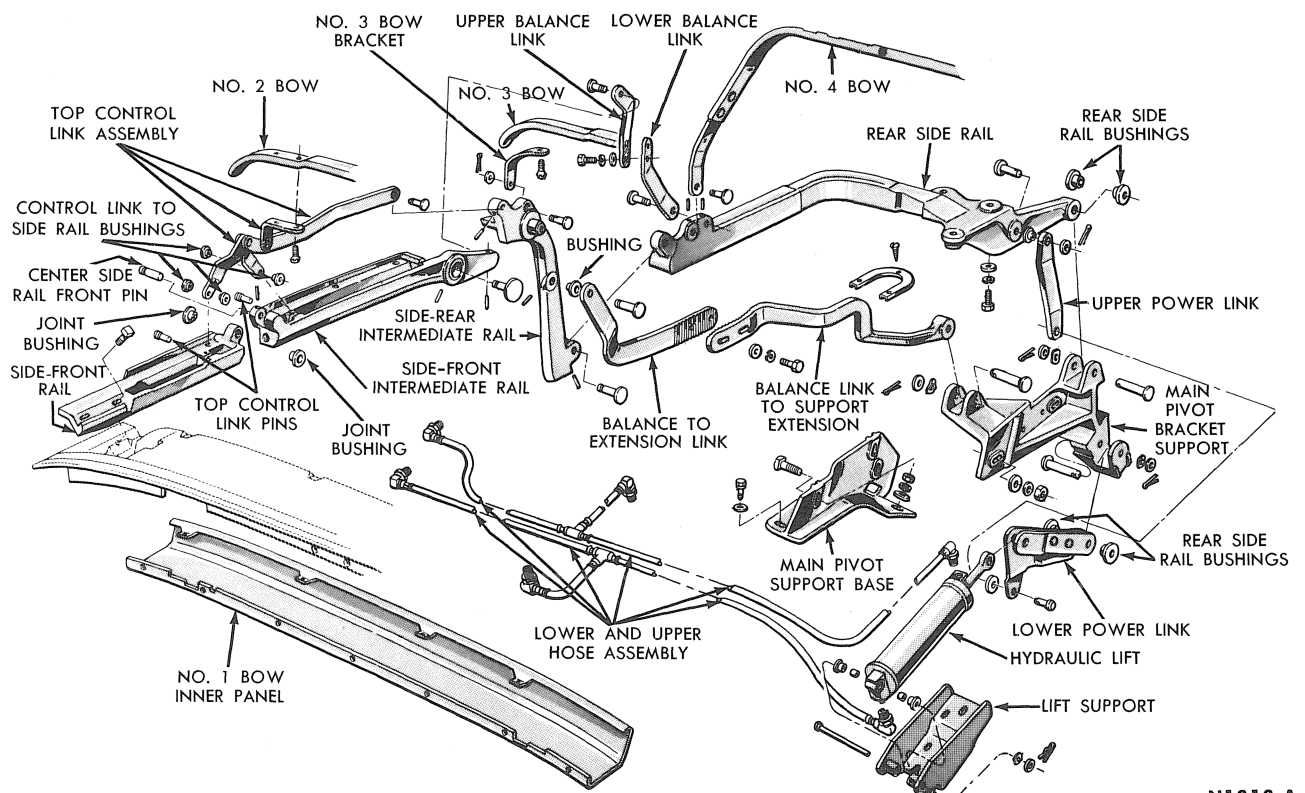


FIG. 1-3—Lincoln Continental Linkage Exploded View

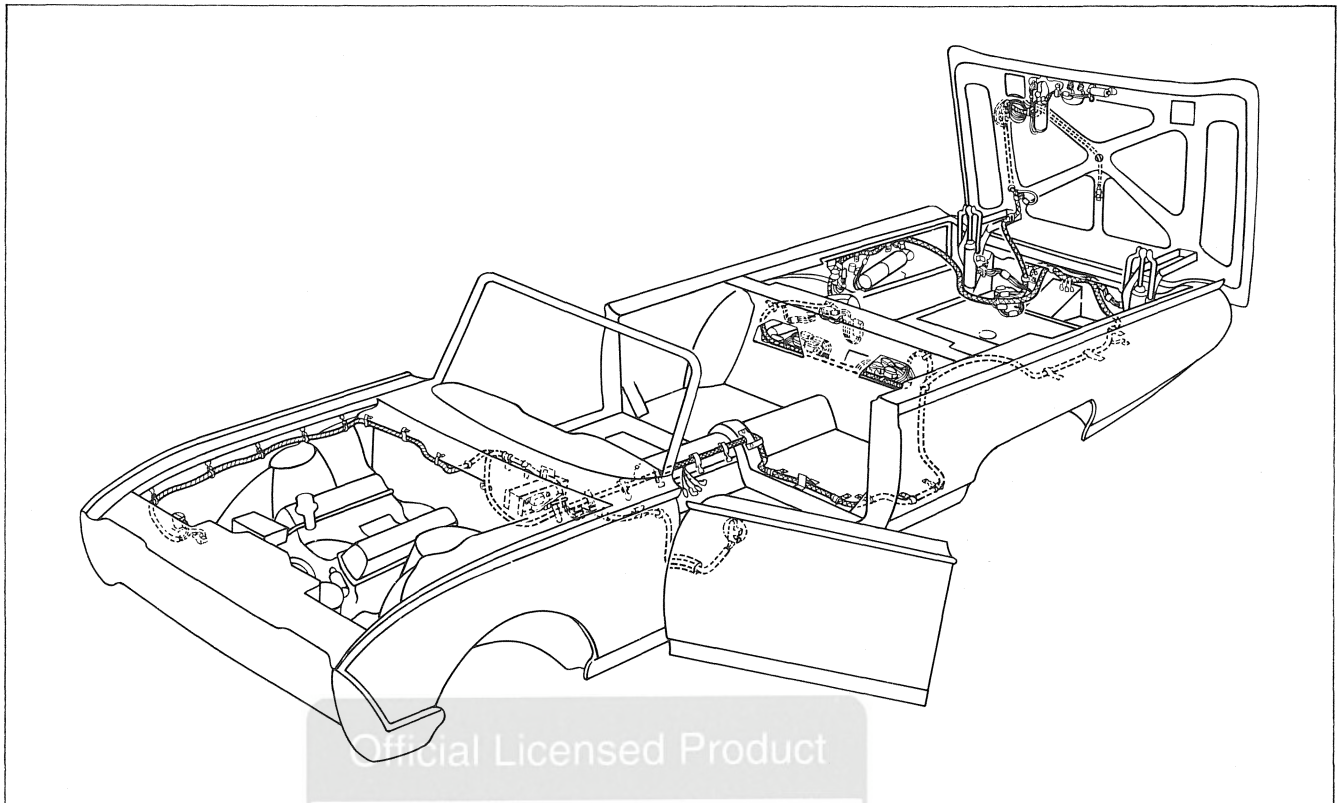
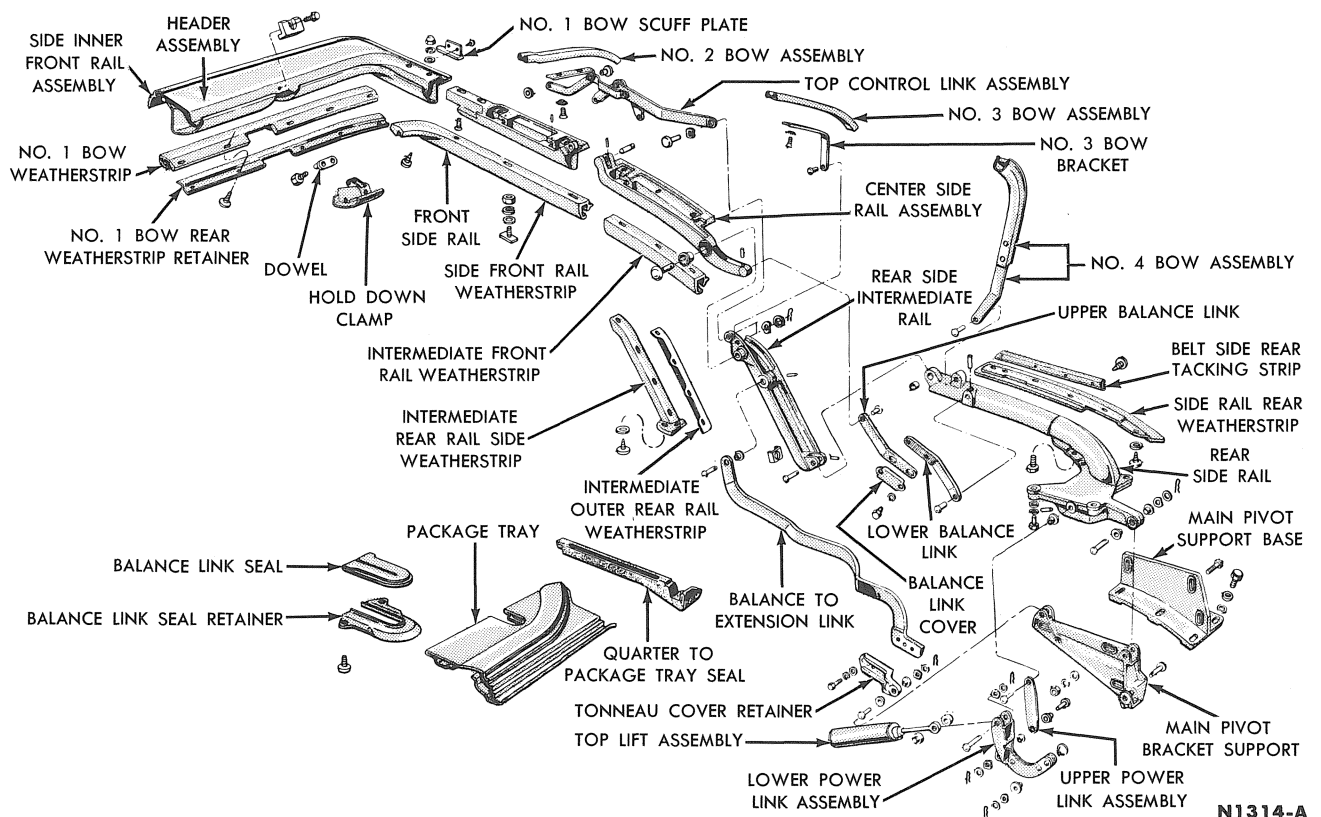
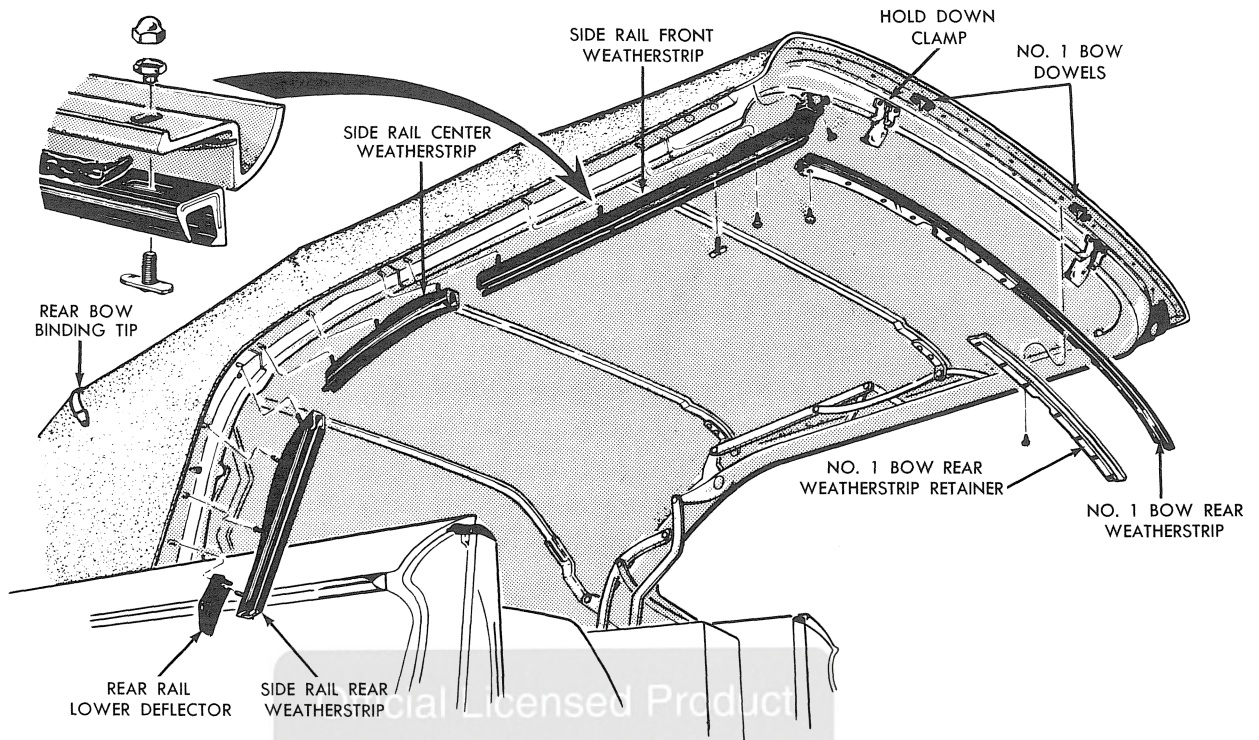


FIG. 1-4—Thunderbird



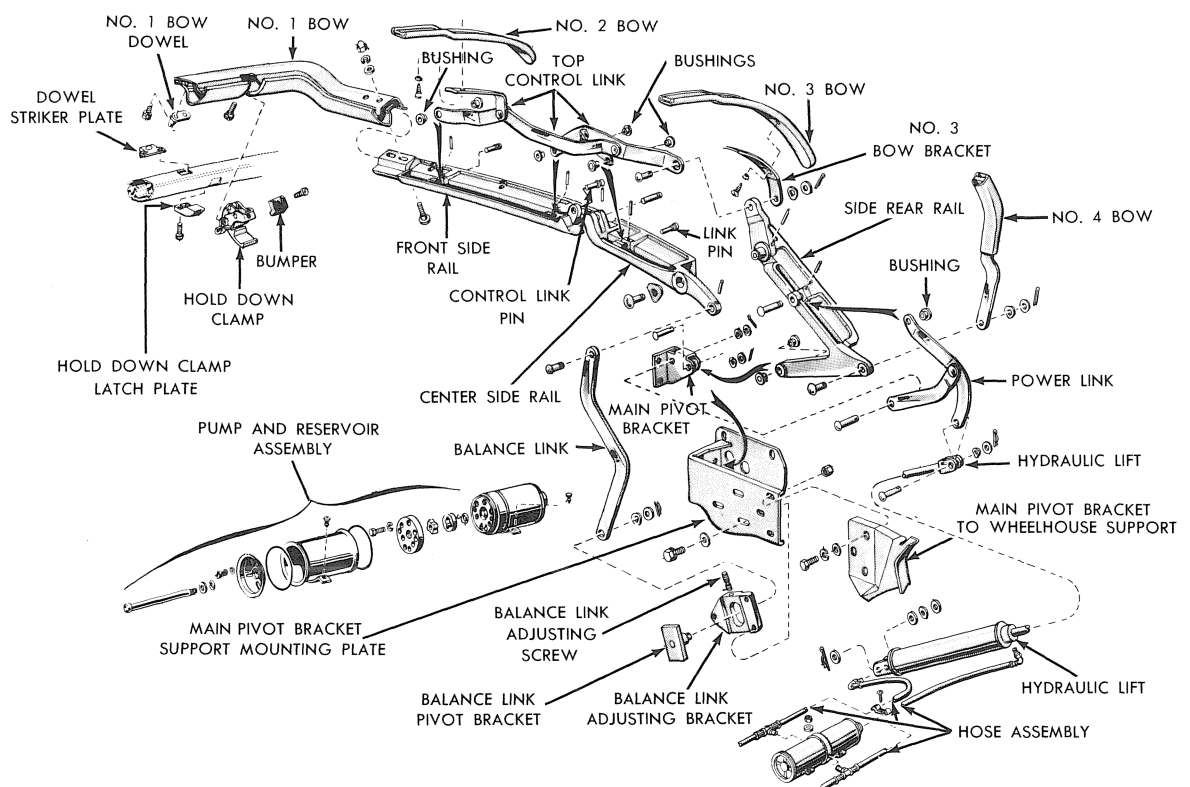
N1314-A

FIG. 1-5—Thunderbird Linkage and Weatherstrips



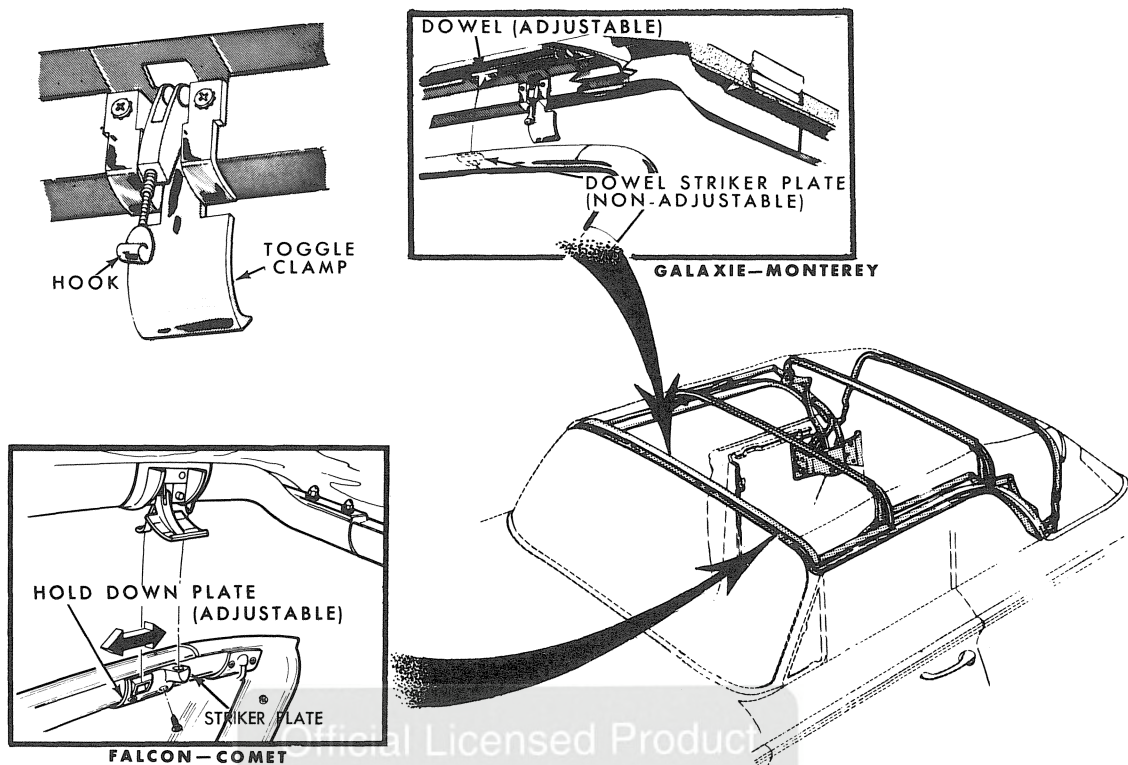
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FIG. 1-6—Galaxie-Monterey Weatherstrips (Falcon-Comet Typical)



N1316-A

FIG. 1-7—Galaxie-Monterey Linkage Exploded View (Falcon-Comet Typical)



N1317A

FIG. 1-8—Galaxie-Monterey-Falcon-Comet Dowel and Dowel Plate Adjustment

2 CARE OF TOP FABRIC

Proper care of the top material will reduce the possibility of water stains, mildew, or shrinkage. Do not stack the top if it is damp. Always use the convertible top vinyl boot to keep the top material clean, dry, and positioned when the top is stacked.

Use the top compartment behind the rear seat-back only for storage of the top. The storage of other items not only interferes with the proper operation of the top, but may

also damage or stain the top material.

The vinyl top may be washed each time the car is washed. Clean the material with mild soap and lukewarm water. A badly soiled top may be cleaned with FoMoCo Interior Trim Cleaner and a scrub brush. For an extremely soiled top, use an abrasive cleaner sparingly. Be sure to rinse the top thoroughly with clean water after washing.

DO NOT USE A CLEANING FLUID THAT IS NOT RECOMMENDED FOR VINYL MATERIAL BECAUSE DAMAGE TO THE TOP MAY RESULT.

The vinyl coating becomes tacky at approximately 180 degrees. Therefore, when making paint repairs, be sure to protect the top material from heat.

PART 2

LINCOLN CONTINENTAL

1 DESCRIPTION

The convertible features automatic lowering of the top assembly into the luggage compartment. The deck lid completely conceals the top, when it is in the retracted position. The operation of the top cycles is accomplished by electrically powered mechanical and hydraulic linkage.

The car should be stopped and all side windows lowered before the top is operated. When the top is cycled, the ignition switch must be in the "ACC" or "ON" position, preferably with the engine running. Also, the transmission selector must be in either the "N" or "P" position, and then, actuate the top control switch.

To retract (lower the top), unfasten the rear window at the zipper and roll it up. Use the straps with the snap buttons provided to hold it in position. Pull out on the top control switch and hold it until the deck lid has fully opened. Then, make sure

that nothing is stored in the luggage compartment that could interfere with the top as it is lowered. Hold the top control switch out again, until the top retract cycle is completed.

To erect (raise the top), push in the top control switch to open the deck lid and raise the top assembly into position. After the deck lid closes and locks, release the top control switch.

The top can be stopped at any time in either cycle (retract or erect) simply by releasing the top control switch. When the top control switch is released, the solenoid valves, which are connected to the hydraulic pressure lines, close and prevent further movement of the top assembly until the circuit is reactivated by moving the top control switch. Do not attempt to manually force the top or the deck lid either up or down.

The operating principles of the top

are divided into two cycles; the retract cycle in which the top unlocks and lowers into the luggage compartment, and the erect cycle in which the top is raised from the stacked position and locks to the windshield header. Each of these cycles is further broken down in the explanation of the electrical circuits involved.

The electrical system (Fig. 2-1) includes four reversible motors; the top lock motor that drives two hook locking rods that lock and unlock the top to the windshield header; the upper back panel motor that drives the upper back panel by a small transmission; the deck lock motor that locks and unlocks the deck lid through flexible drive cables; and the top/deck motor that drives a hydraulic pump which supplies hydraulic fluid pressure to open and close the deck lid and the top assembly.

2 CONTROL AND POWER FEED CIRCUITS

There are eleven relays (Figs. 2-1 and 2-2). The top control neutral relay, located on the horn relay plate, at the right side cowl (Fig. 2-3), is used as a safety device in the control circuit. The control circuit cannot be energized until the top control neutral relay contacts are closed. The circuit is complete only when the neutral switch is closed.

The circuit is closed when the transmission selector lever is in "P" or "N" and the ignition switch is in the "ACC" or "ON" position. The remaining ten relays are used to energize the motors and the three solenoids (Figs. 2-1 and 2-2).

The electrical system is protected by five circuit breakers; a 50-ampere circuit breaker located on the horn

relay plate (Fig. 2-3) in the power circuit and a 10-ampere circuit breaker in the top control circuit, located in the fuse panel at the right side of the glove box (Fig. 2-3). There are three individual 15-ampere circuit breakers, one for each motor feed circuit except the top/deck motor.

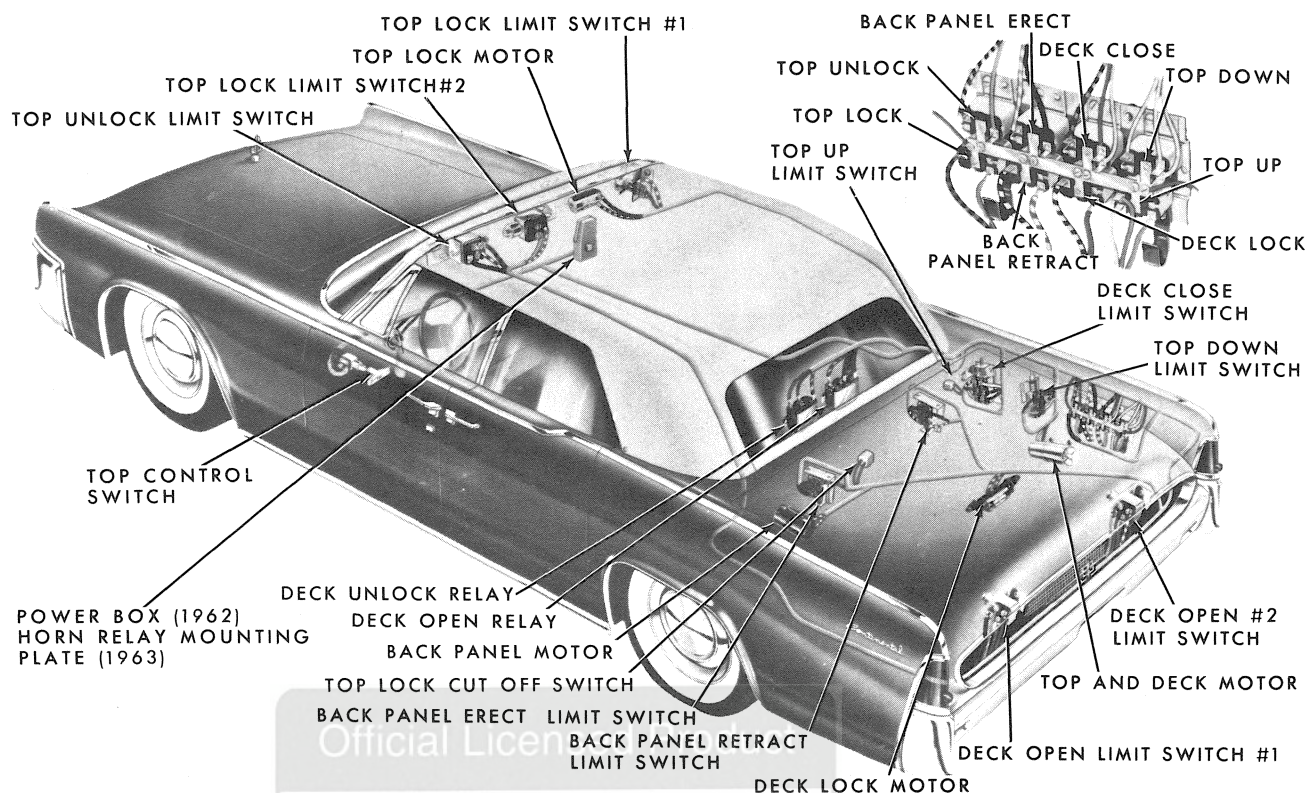


FIG. 2-1—Electrical Components

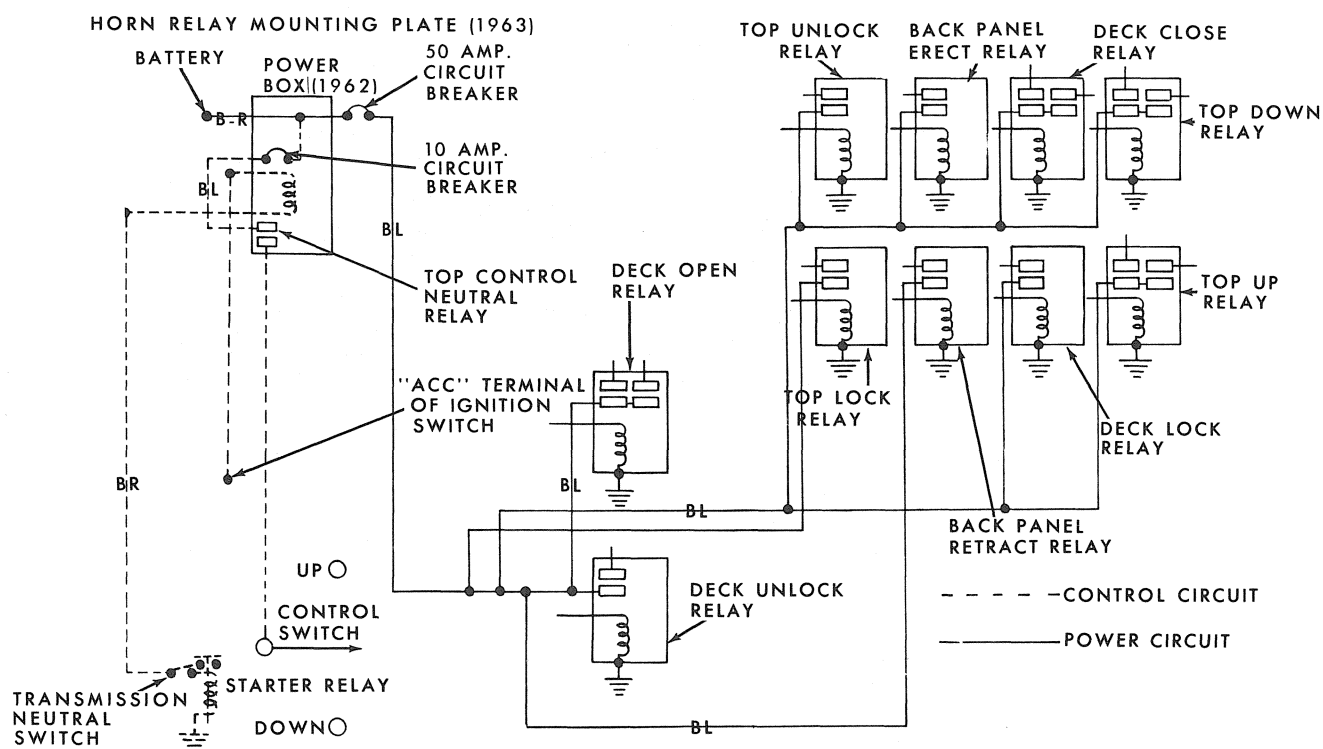
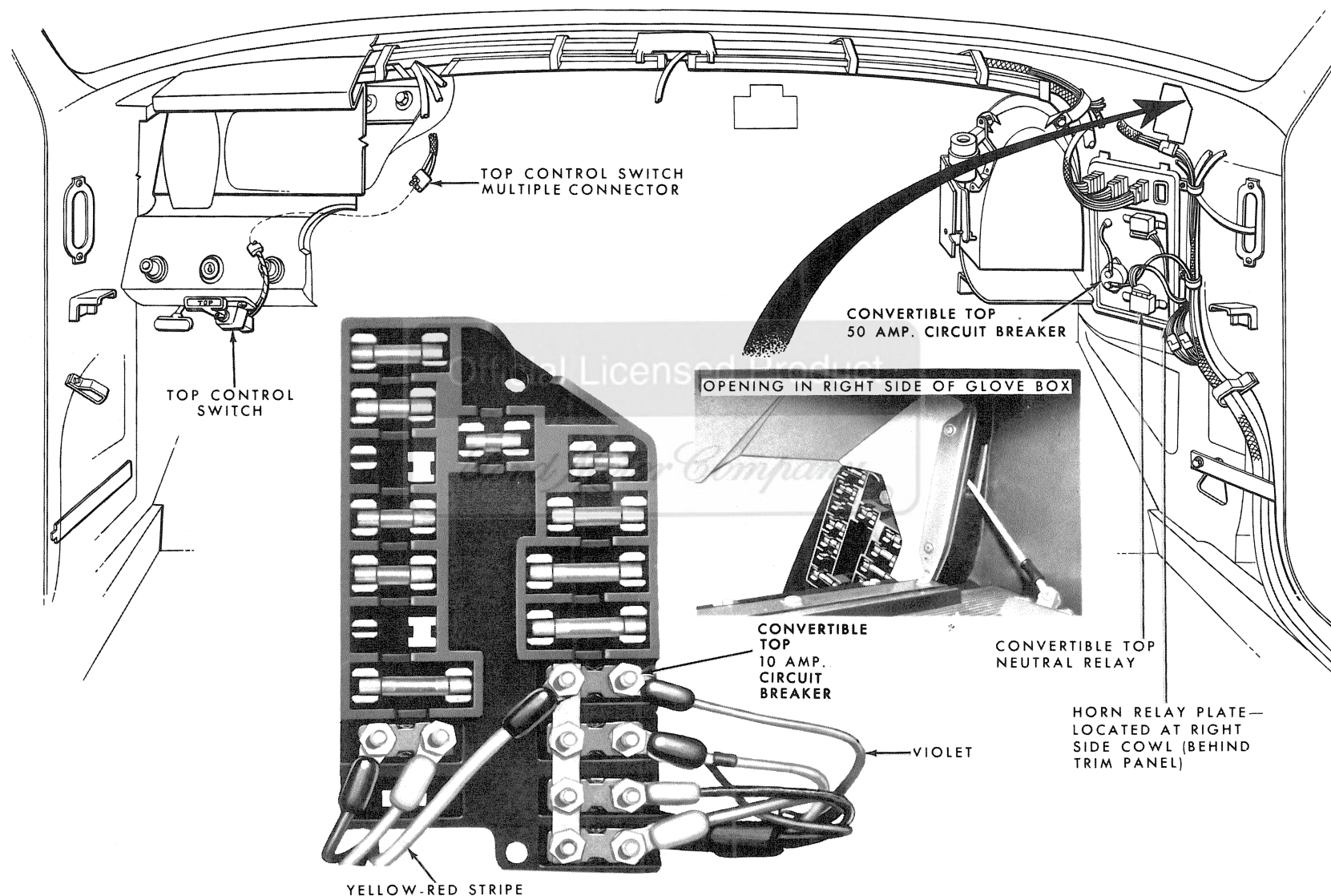


FIG. 2-2—Control and Power Feed Circuits



N-1311A

FIG. 2-3—Fuse Panel and Horn Relay Plate

3 HYDRAULIC SYSTEM

The deck lid and convertible top assembly are each operated by two hydraulic cylinders, receiving pressure from one electrically powered reversible motor and pump. The hydraulic fluid pressure is controlled by three electrically activated solenoid valves, two for the top assembly, and one for the deck lid (Fig. 2-4).

The control circuit to the top control switch is identical for both the top retract cycle and top erect cycle. The ignition switch must be turned to the "ACC" or "ON" position and the transmission selector in "N" or "P" position (transmission neutral switch contacts closed). Current flows from the ignition switch,

through the top control relay, the transmission neutral switch, and the starter motor relay to ground. The top control neutral relay is energized, closing the relay contacts, and current flows from the 10-ampere circuit breaker through the top control switch.

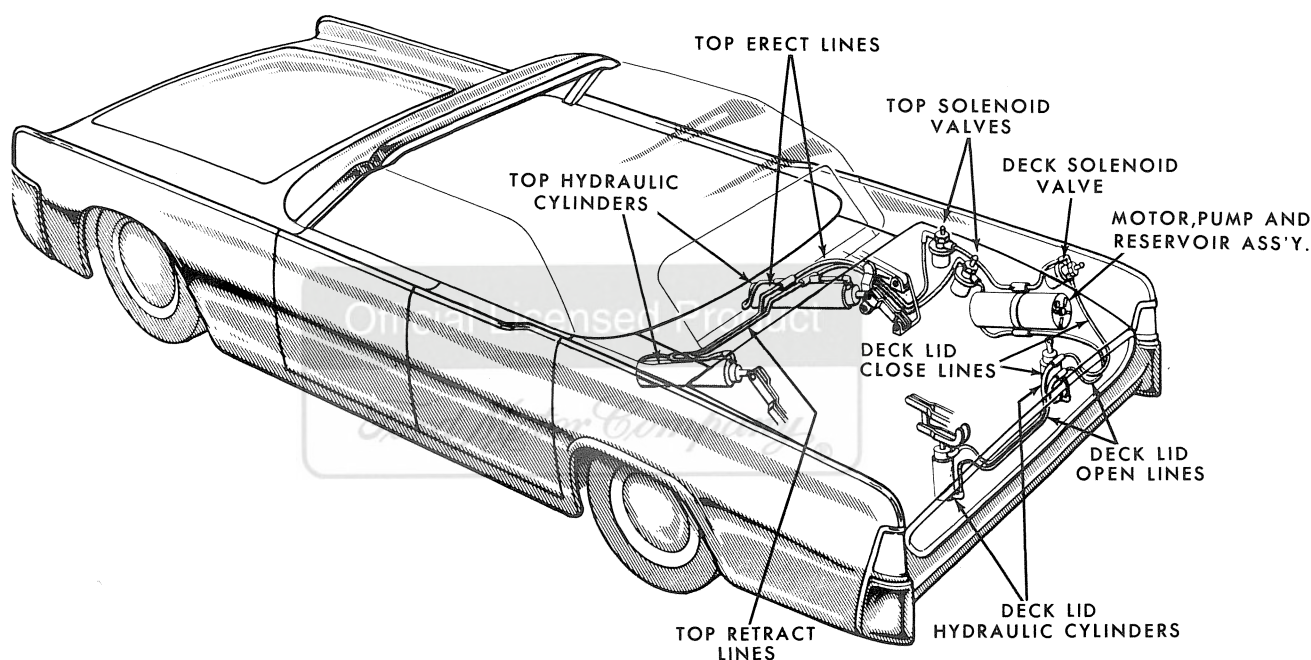


FIG. 2-4—Hydraulic System

4 CONVERTIBLE TOP RETRACT AND ERECT CYCLE

The location and proper nomenclature for each electrical component is illustrated in Figure 2-1. The function of these components will be explained in detail with the circuits of each phase of the retract and erect cycle.

The following is a breakdown of the complete operation into the two cycles and their respective phases. These are to be used during troubleshooting procedures. The corresponding figure numbers refer to the complete circuit for each phase.

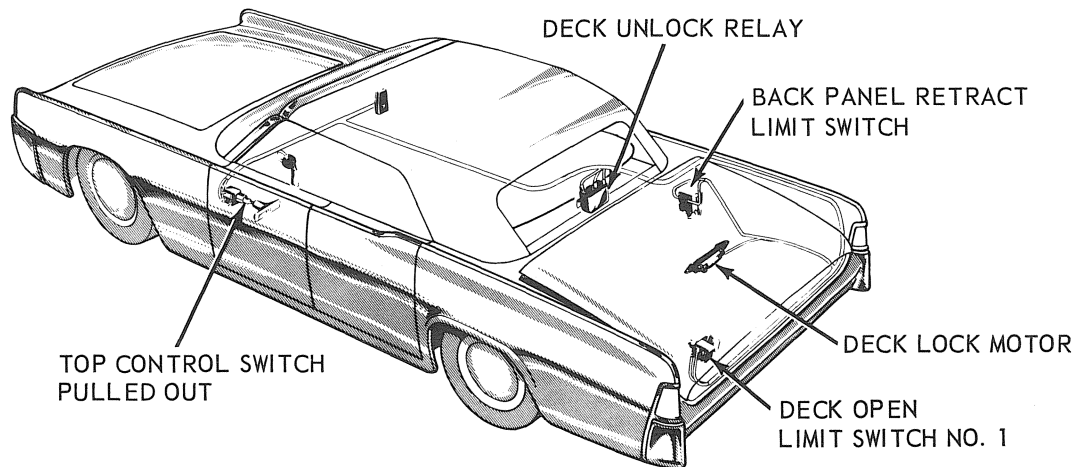
TOP RETRACT CYCLE

1. Deck lid unlock—Figure 2-5.
2. Deck lid open—Figure 2-6.
3. Upper back panel erect—Figure 2-7.
4. Top unlock—Figure 2-8.
5. Top retracting—Figure 2-9.
6. Deck lid close and lock—Figure 2-10.

TOP ERECT CYCLE

1. Deck lid unlock—Figure 2-11.
2. Deck lid open—Figure 2-12.
3. Top erect—Figure 2-13.
4. Top lock—Figure 2-14.
5. Upper back panel retract—Figure 2-15.
6. Deck lid close and lock—Figure 2-16.

TOP RETRACT CYCLE



B BLACK

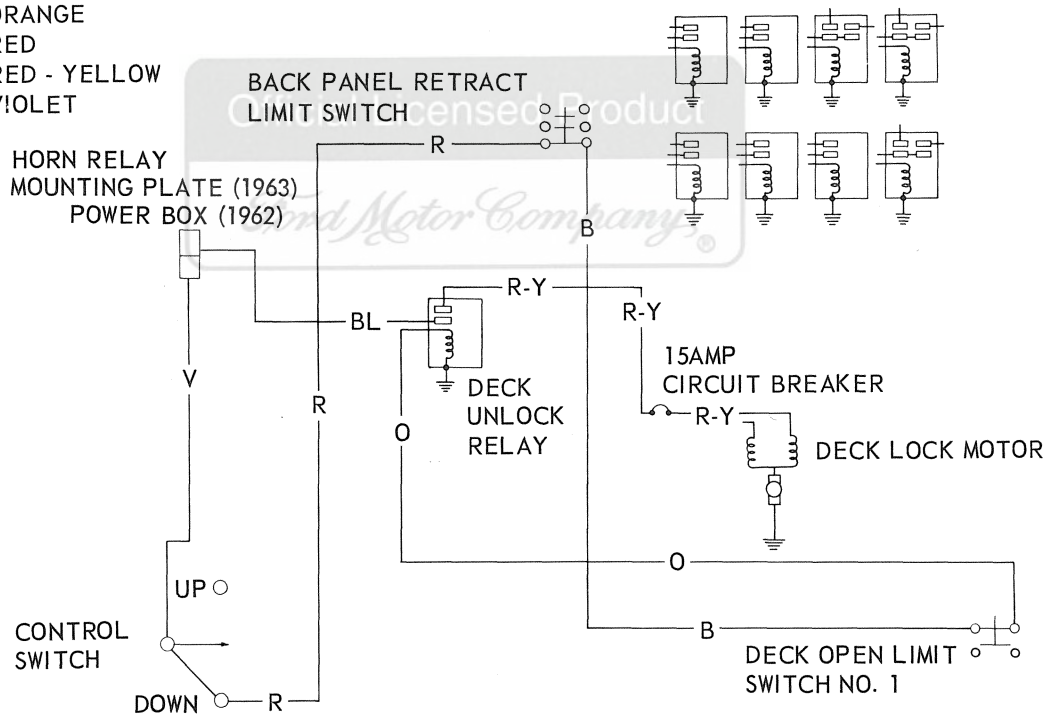
BL BLUE

O ORANGE

R RED

R-Y RED - YELLOW

V VIOLET

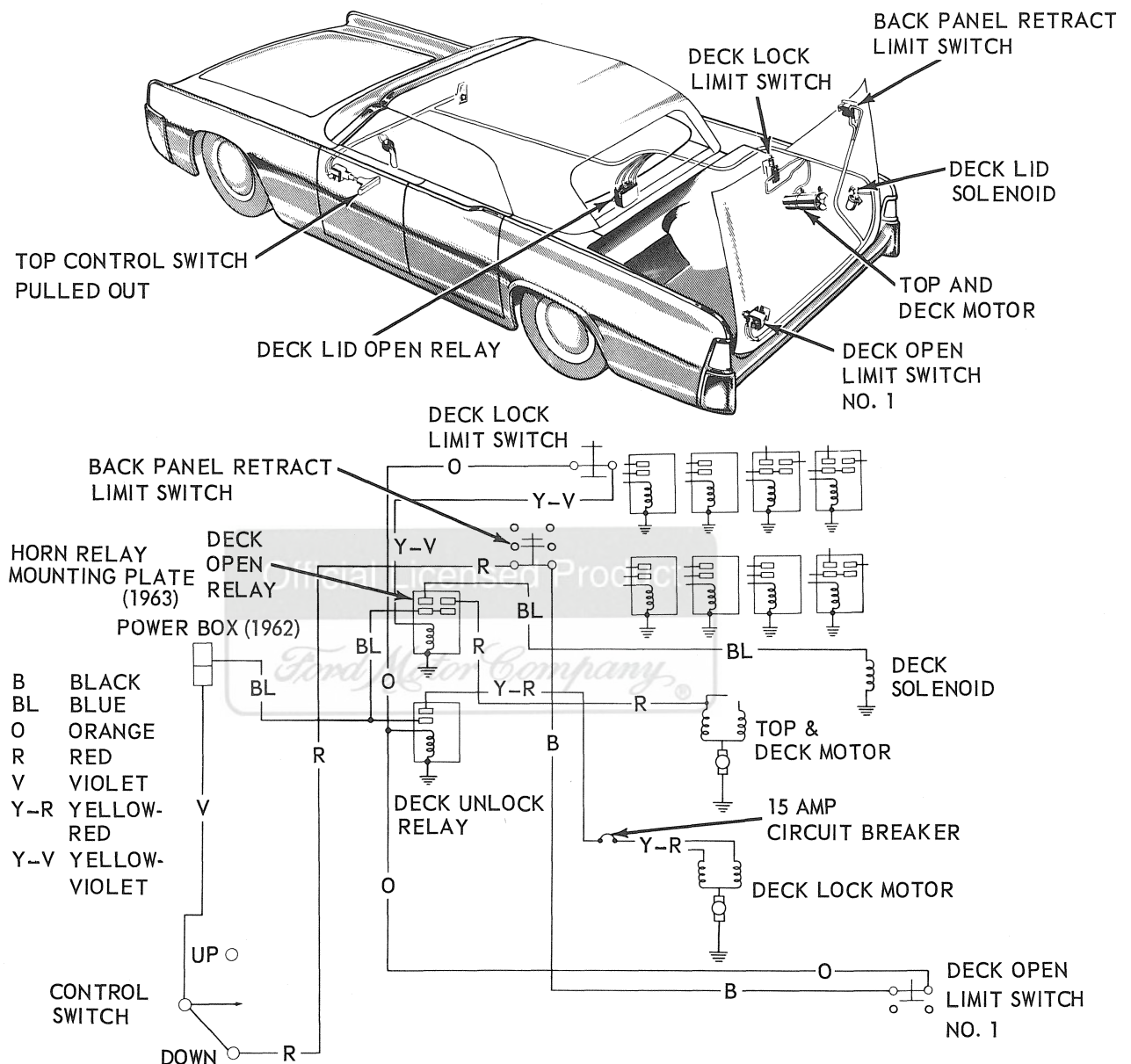


1. DECK LID UNLOCK PHASE

With the top control switch in the top down position, current flows from the top control switch, through the upper back panel retract limit switch, the left-hand deck open limit switch (usually called - deck open limit switch #1), and the deck unlock relay coil to ground. The deck unlock relay coil is energized, closing the relay contacts which complete the power circuit from the 50 amp circuit breaker, through the 15 amp circuit breaker to the deck lock motor. The motor is energized and the deck lid is unlocked.

FIG. 2-5 – Deck Lid Unlock Phase (Top Retract Cycle)

TOP RETRACT CYCLE (Cont.)



2. DECK LID OPEN PHASE

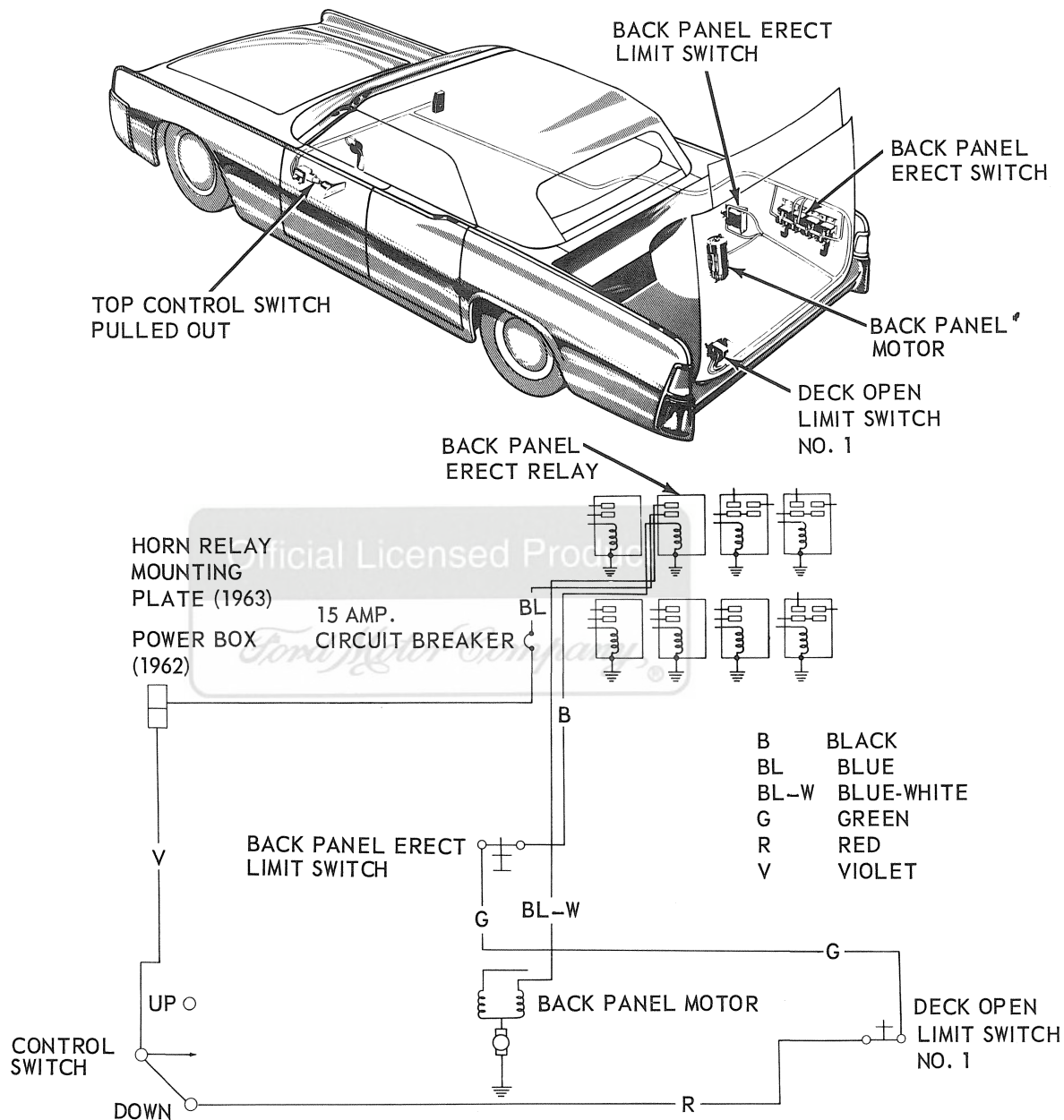
As soon as the deck lid is unlocked, the deck lock limit switch contacts are repositioned. The current now flows from the top control switch through the back panel retract limit switch through the deck open limit switch #1, through the deck lock limit switch and the deck open relay coil to ground. This closes the deck open relay multiple contacts which complete the power circuits from the 50 amp circuit breaker to the top/deck motor and the deck solenoid valve.

The deck solenoid valve is energized and the proper hydraulic lines are opened to the deck control cylinders. At the same time the top/deck motor is energized and the deck lid is opened.

NOTE: Deck locks continue to operate until deck is completely open.

FIG. 2-6—Deck Lid Open Phase (Top Retract Cycle)

TOP RETRACT CYCLE (Cont.)



3. UPPER BACK PANEL ERECT PHASE

When the deck lid is completely open, the plunger of the deck open limit switch #1 is depressed and the switch contacts are repositioned. The current now flows from the top control switch, through the deck open switch #1, the upper back panel erect limit switch, and the upper back panel erect relay coil to ground. The relay contacts close and the power circuit is completed to the upper back panel motor from the 50 amp circuit breaker, through the 15 amp circuit breaker to the upper back panel motor. The motor is energized and the upper back panel is erected.

FIG. 2-7—Upper Back Panel Erect Phase (Top Retract Cycle)

TOP RETRACT CYCLE (Cont.)

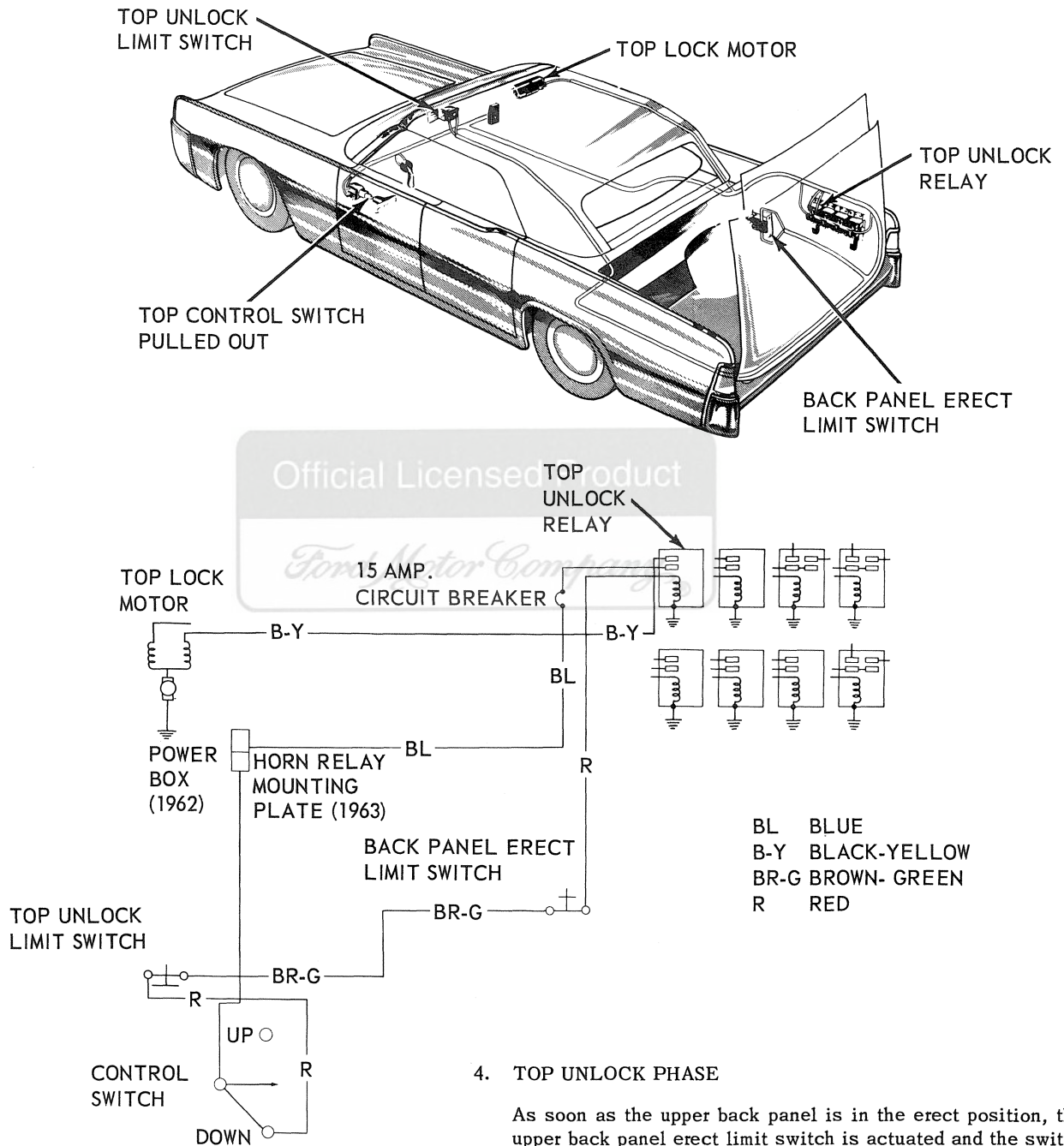
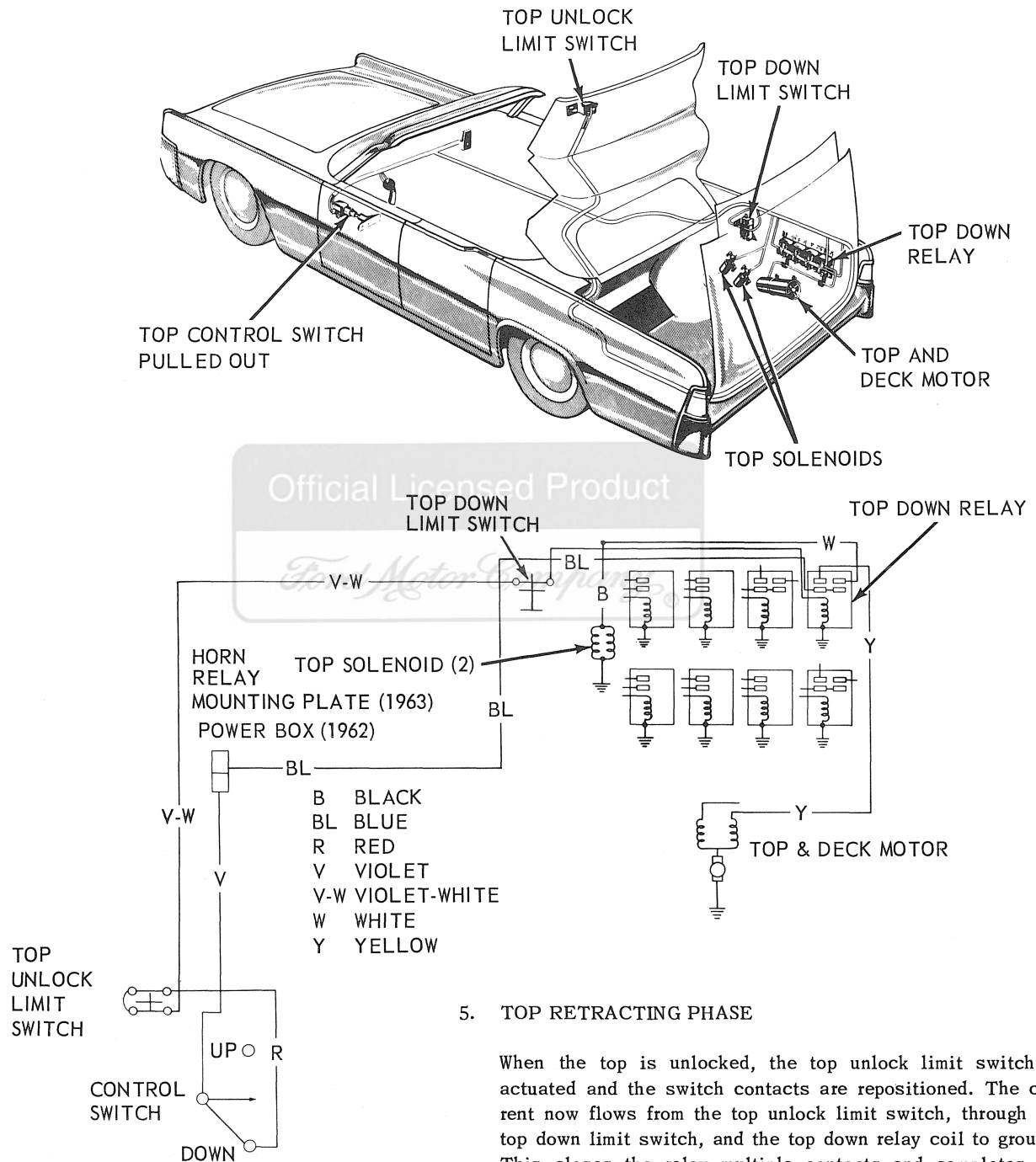


FIG. 2-8—Top Unlock Phase (Top Retract Cycle)

TOP RETRACT CYCLE (Cont.)



5. TOP RETRACTING PHASE

When the top is unlocked, the top unlock limit switch is actuated and the switch contacts are repositioned. The current now flows from the top unlock limit switch, through the top down limit switch, and the top down relay coil to ground. This closes the relay multiple contacts and completes the power circuits to the top/deck motor and the two top solenoid valves are energized and the proper hydraulic lines are opened to the control cylinders. At the same time the top/deck motor is energized and the top is lowered into the luggage compartment.

FIG. 2-9—Top Retracting Phase (Top Retract Cycle)

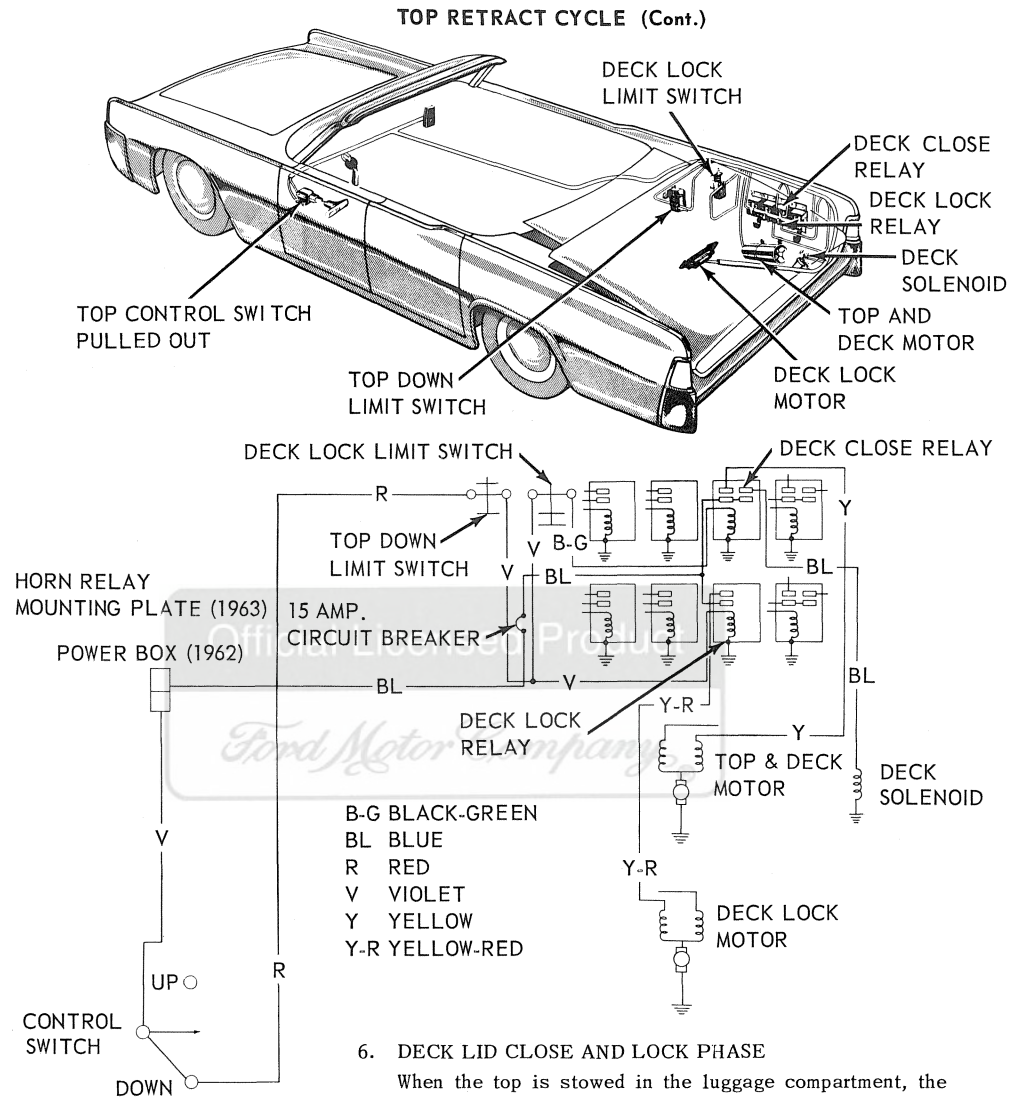
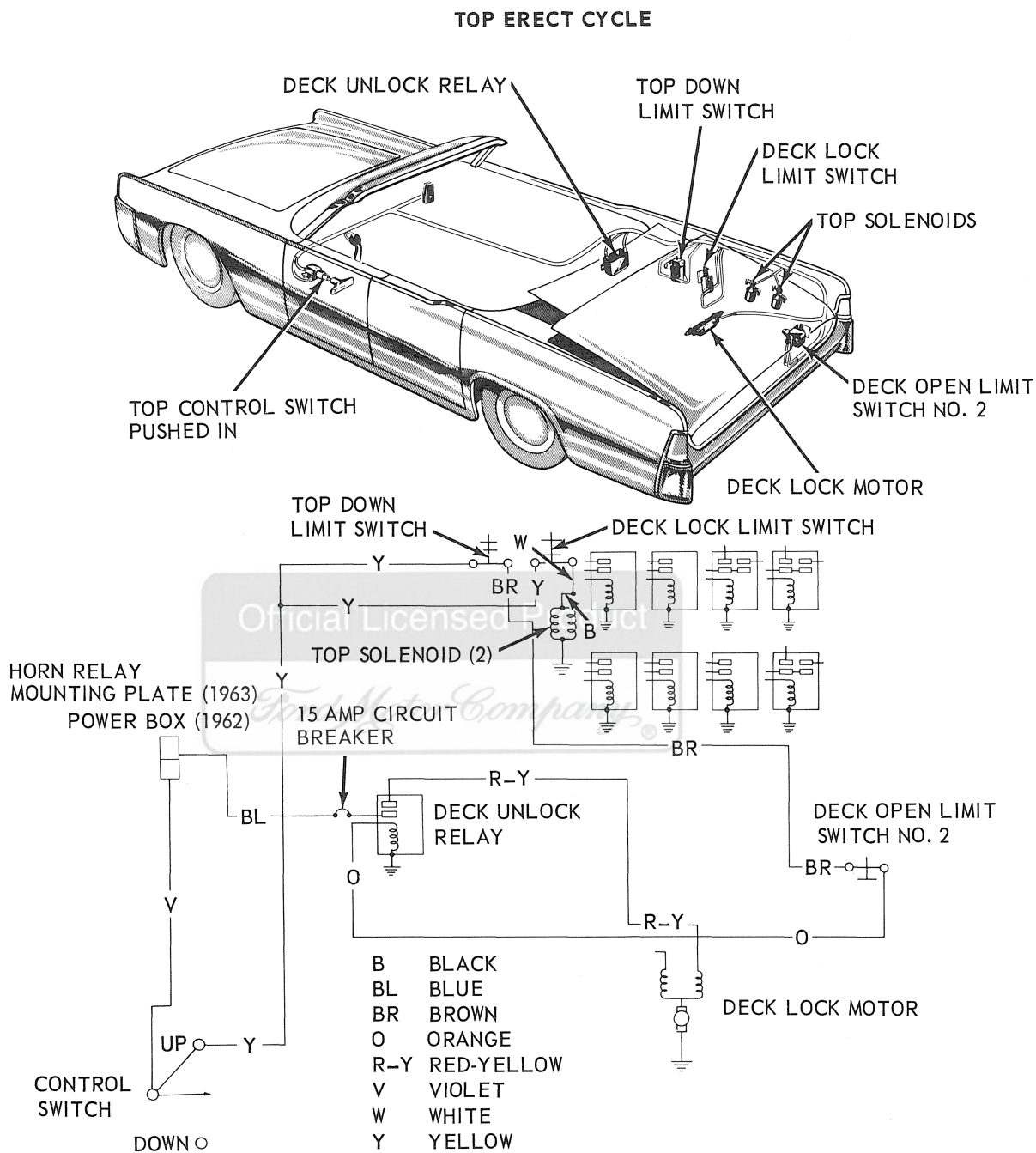


FIG. 2-10—Deck Lid Close and Lock Phase (Top Retract Cycle)

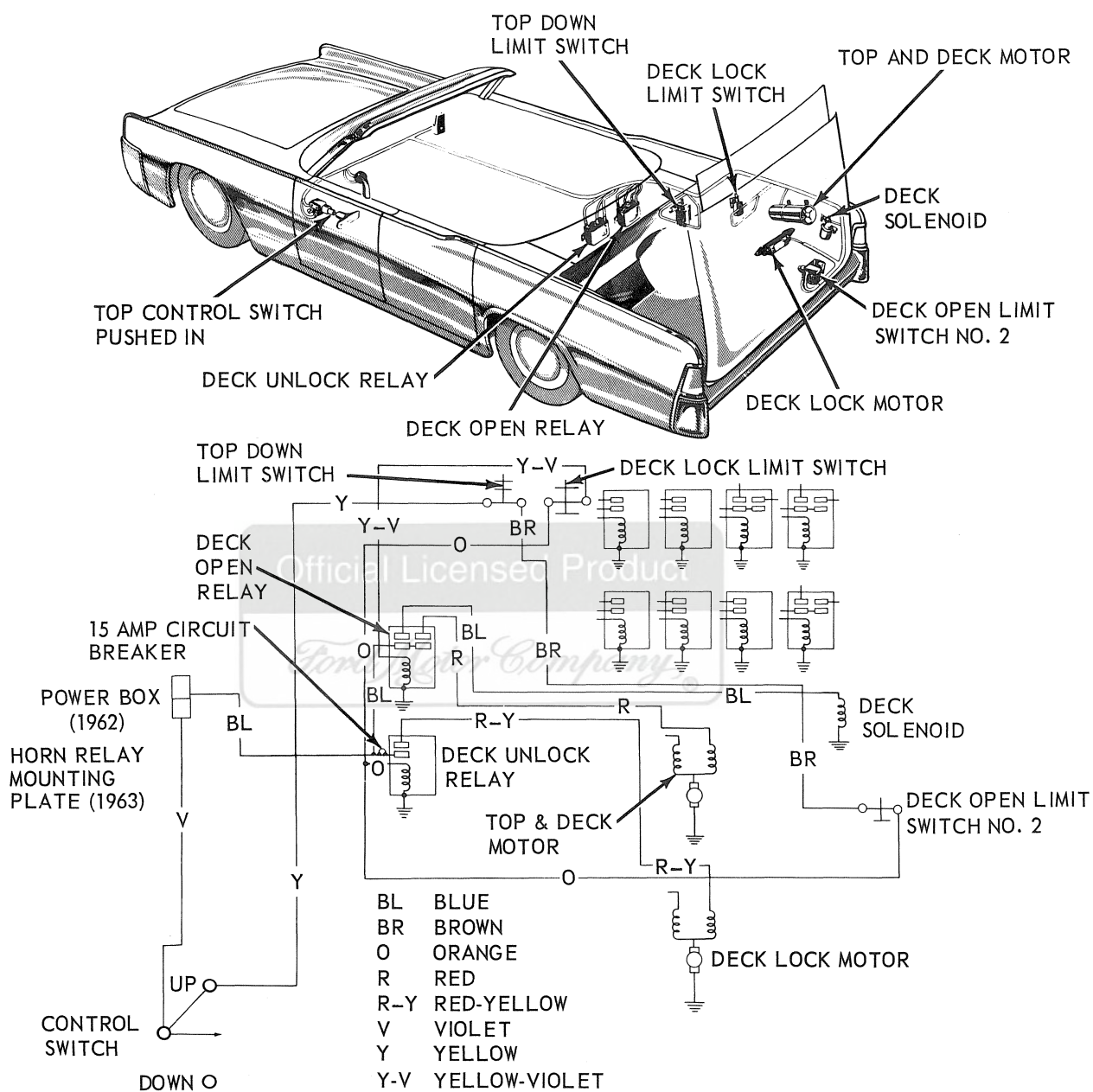


1. DECK LID UNLOCK PHASE

With the top control switch in the top up position, current flows from the top control switch, through the top down limit switch, the right hand deck open limit switch (usually called the deck open limit switch #2), and the deck unlock relay coil to ground. The relay is energized, the contacts are closed, and the power circuit is completed to the deck lock motor. The motor is energized and the luggage compartment is unlocked.

FIG. 2-11 –Deck Lid Unlock Phase (Top Erect Cycle)

TOP ERECT CYCLE (Cont.)



2. DECK LID OPEN PHASE

As soon as the deck lid is unlocked, the deck lock limit switch contacts are repositioned. Now the current flows from the deck open limit switch #2, through the deck lock limit switch, and the deck open relay to ground. The relay multiple contacts close and the power circuits to the deck solenoid valve and the top/deck motor are energized and the hydraulic lines are opened to the deck hydraulic control cylinders. The top/deck motor is energized and the deck lid is opened.

NOTE: Deck lock motors continue to run until deck is completely open.

FIG. 2-12—Deck Lid Open Phase (Top Erect Cycle)

TOP ERECT CYCLE (Cont.)

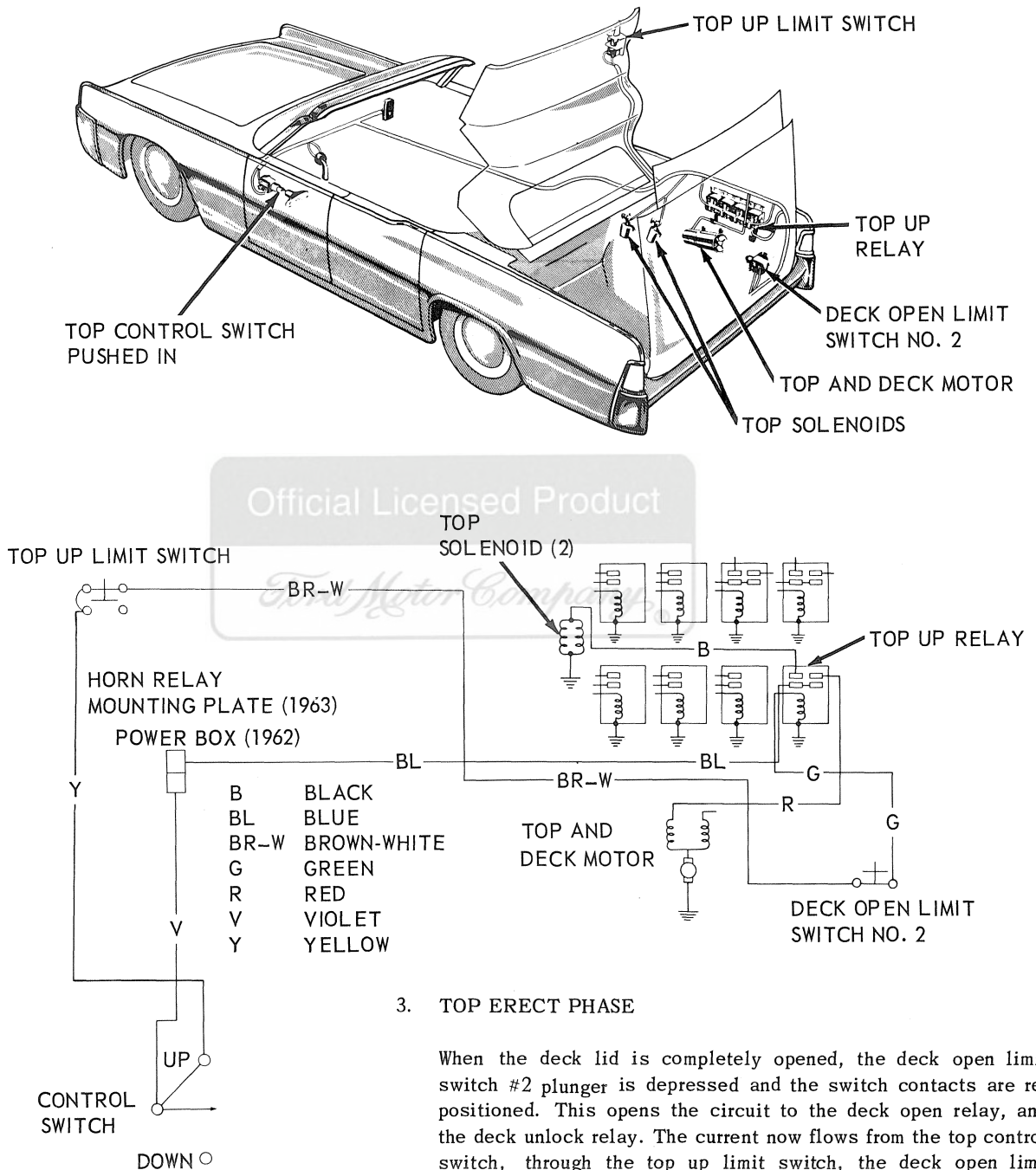
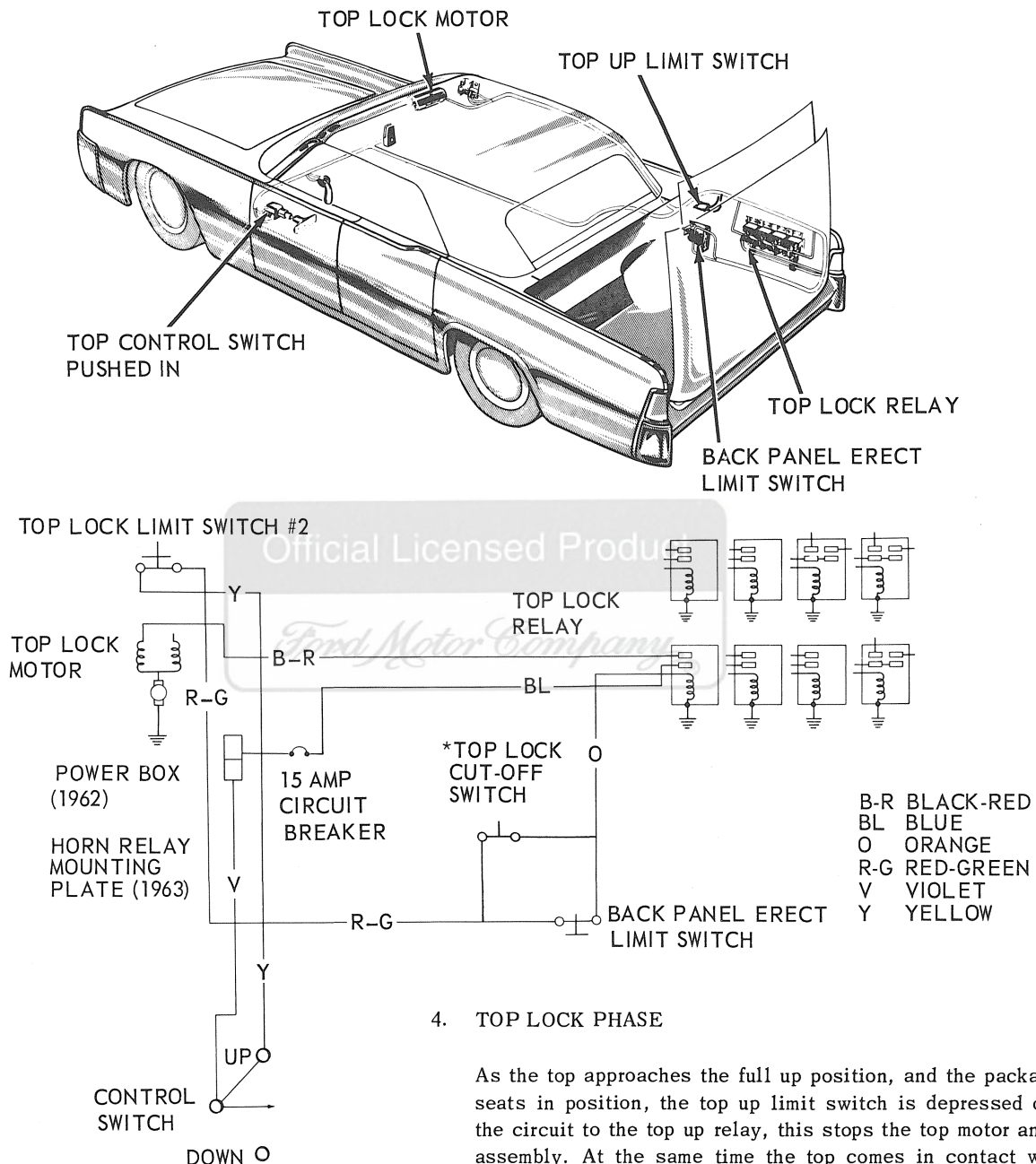


FIG. 2-13—Top Erect Phase (Top Erect Cycle)

TOP ERECT CYCLE (Cont.)



4. TOP LOCK PHASE

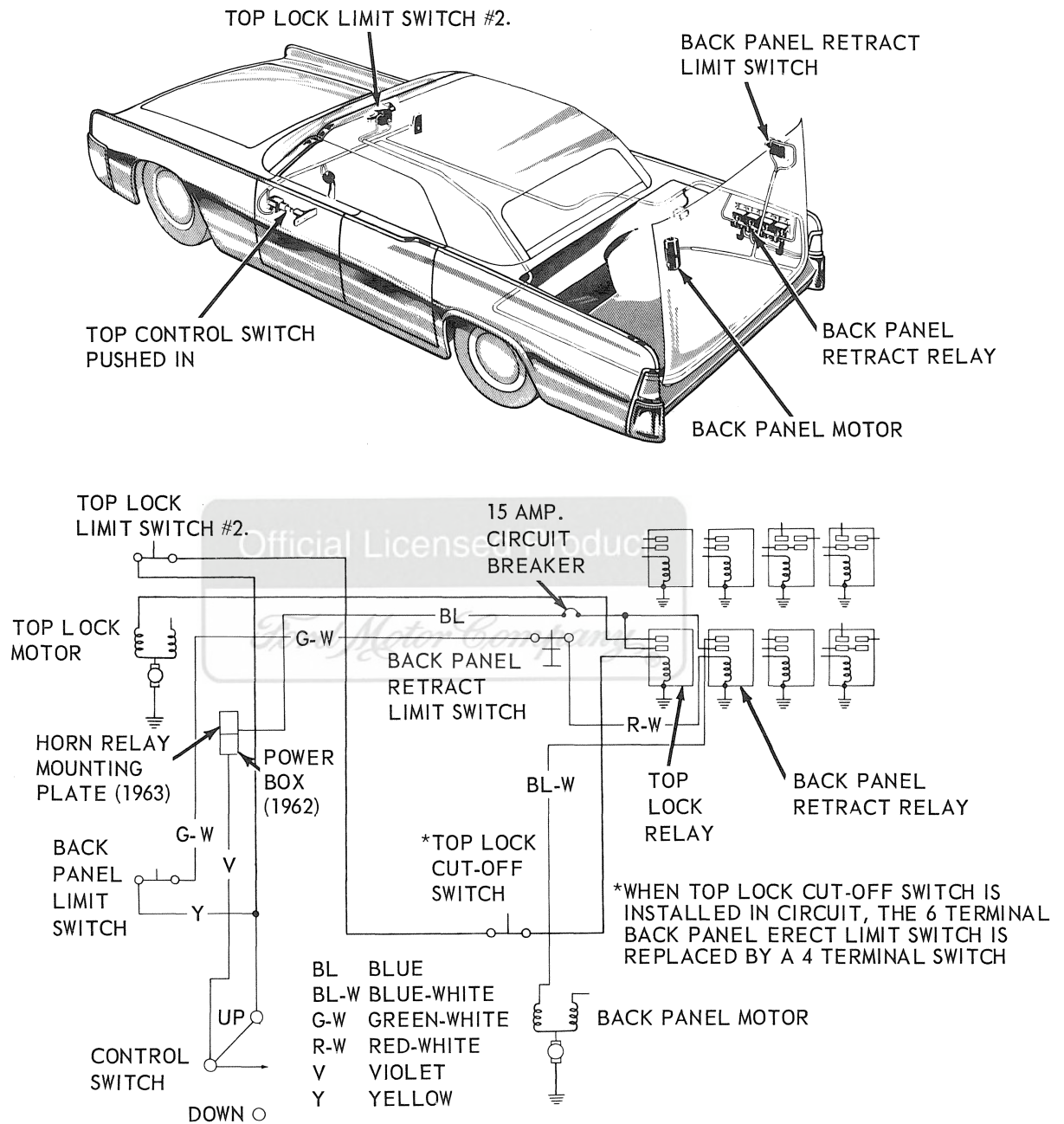
As the top approaches the full up position, and the package tray seats in position, the top up limit switch is depressed opening the circuit to the top up relay, this stops the top motor and pump assembly. At the same time the top comes in contact with the windshield header, the contacts of top lock limit switch #1 are closed. The current now flows from the top control switch, through the top lock limit switch, the top lock cut off limit switch, and the top lock relay to ground. The relay contacts close and the power circuit is completed to the top lock motor. The motor is energized and the top is locked into position.

*WHEN TOP LOCK CUT-OFF SWITCH IS INSTALLED IN CIRCUIT, THE 6 TERMINAL BACK PANEL ERECT LIMIT SWITCH IS REPLACED BY A 4 TERMINAL SWITCH.

NOTE: Lock motor remains energized until the upper back panel is retracted.

FIG. 2-14—Top Lock Phase (Top Erect Cycle)

TOP ERECT CYCLE (Cont.)



5. UPPER BACK PANEL RETRACT PHASE

During the top locking action, the top lock limit switch #2 is actuated and the switch contacts are closed. This permits the current to flow from the top control switch, through the top lock limit switch #2, the upper back panel retract limit switch, and the back panel retract relay to ground. The relay contacts close, completing the power circuit to the upper back panel motor and the upper back panel is retracted.

FIG. 2-15—Upper Back Panel Retract Phase (Top Erect Cycle)

TOP ERECT CYCLE (Cont.)

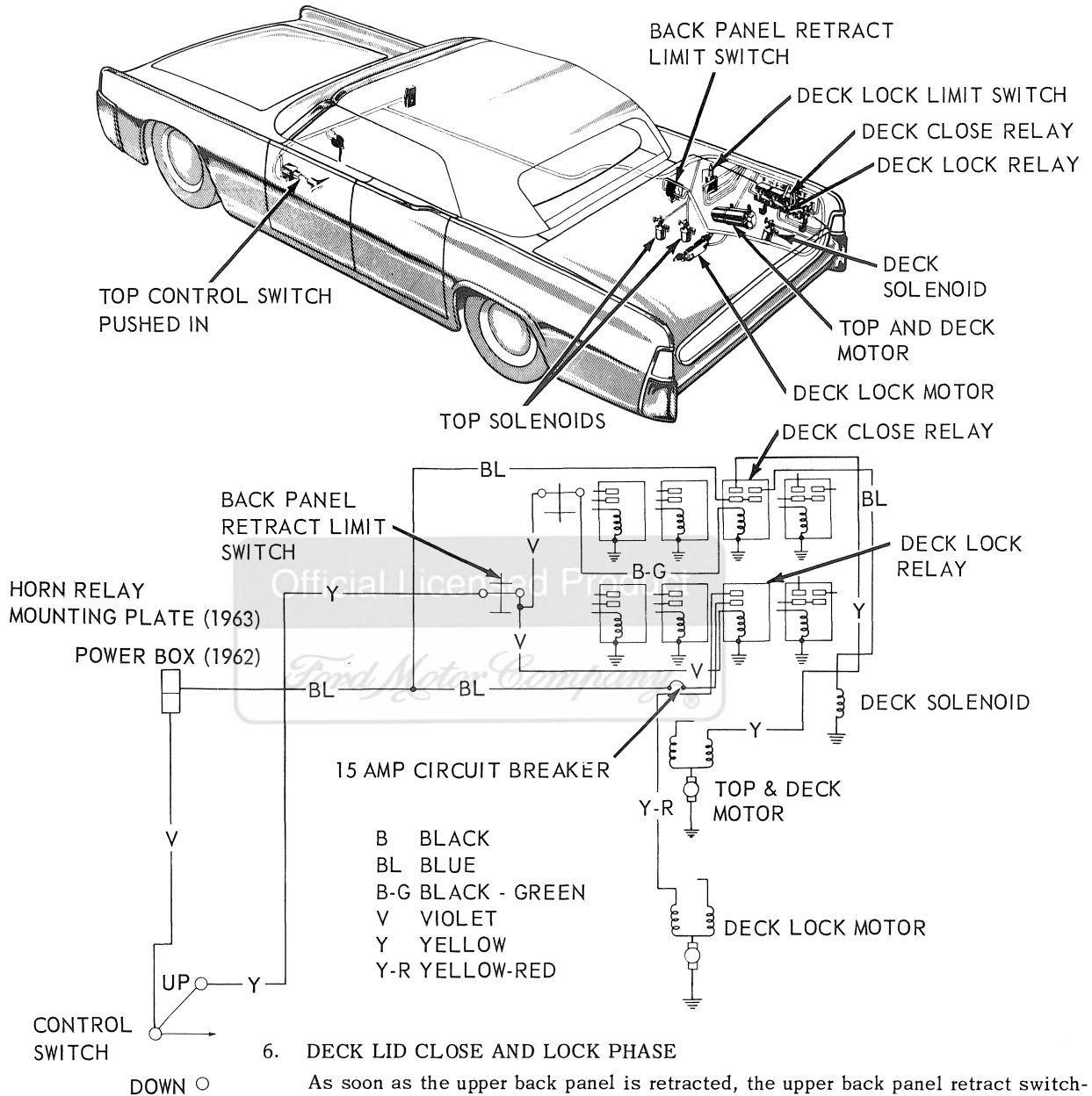


FIG. 2-16—Deck Lid Close and Lock Phase (Top Erect Cycle)

5 TROUBLE DIAGNOSIS

To properly accomplish trouble shooting, the convertible top operating principles and sequence of operations should be thoroughly understood. There should also be an adequate power supply from the battery.

The most common operational failures will be due to maladjusted switches in the control circuit. The power circuits can be individually operated by energizing the correct power relay by means of a jumper wire.

Do not use an external power source. Extensive damage to electrical components could occur if an external power source is used.

When an individual component is cycled by means of a jumper wire, that component must be returned to its original position in the top cycle before proceeding. If this is not done, damage to the top, deck, and/or back panels could occur.

This method is applicable since it permits by-passing various limit

switches and operating the motors directly. If by-passing a control circuit operates the motor, a continuity check should be made on the components of that particular control circuit. However, before this is attempted, the motor relay feed circuit breaker (power circuit) (50 ampere), (Fig. 2-3) must be checked and it must be ascertained that the motor is not jammed or stalled.

If by-passing the control circuit is not effective and no mechanical failure is evident, a failed relay, a failed motor, or an open circuit in the motor feed circuit is indicated. The relay can be by-passed to test the motor.

If at any point during the operation of the top, a motor continues to run after a cycle has been completed, and releasing the top control switch does not stop the motor, there is a probability of a stuck relay. Disconnect the battery to stop the motor, then replace the applicable relay.

Before proceeding, the main power

source circuit breaker, the top control neutral relay, and the top control switch (Fig. 2-3) should be tested, as they control the complete top circuit. If no current is available at the top control neutral relay, the control circuit 10 amp. circuit breaker or the neutral switch is at fault.

Don't overlook the hydraulic system. This system must be operating properly in order to obtain proper operation of the top.

Sluggish operation at the top or deck lid assemblies is often accompanied by a loud and irregular pump noise. Very frequently, this is caused by a low hydraulic fluid level. When this condition exists, cycle the top and then check the pump reservoir for proper fluid level. The fluid level should be within ¼ inch of the filler plug hole with the deck lid and top in the raised position.

If it is necessary to add fluid, use only "Heavy Duty Brake Fluid" B7A-19542 in the hydraulic system.

6 EMERGENCY PROCEDURES

MANUALLY UNLOCKING TOP

When the top unlocking mechanism becomes inoperative, and the top will not unlock at the header, it may be necessary to manually unlock the top by removing the No. 1 bow access cover and manually turning the motor coupling to unlock the top.

MANUALLY OPENING DECK LID

There are two methods of opening the deck lid. With a jumper wire the deck unlock relay plug and deck open relay plug can be activated. If this procedure does not work, the deck lid can be unlocked and opened mechanically.

OPENING DECK LID WITH JUMPER WIRE

Remove the rear seat cushion and cushion back. This will allow access to the deck unlock relay and deck open relay (Fig. 2-17). **(Fabricate a jumper wire "12 ga.," that has a sufficient capacity to conduct 50 amperes of current.)**

1. Remove the multiple plug from the deck unlock relay (Fig. 2-17). This is the relay that is closest to the centerline of the car.

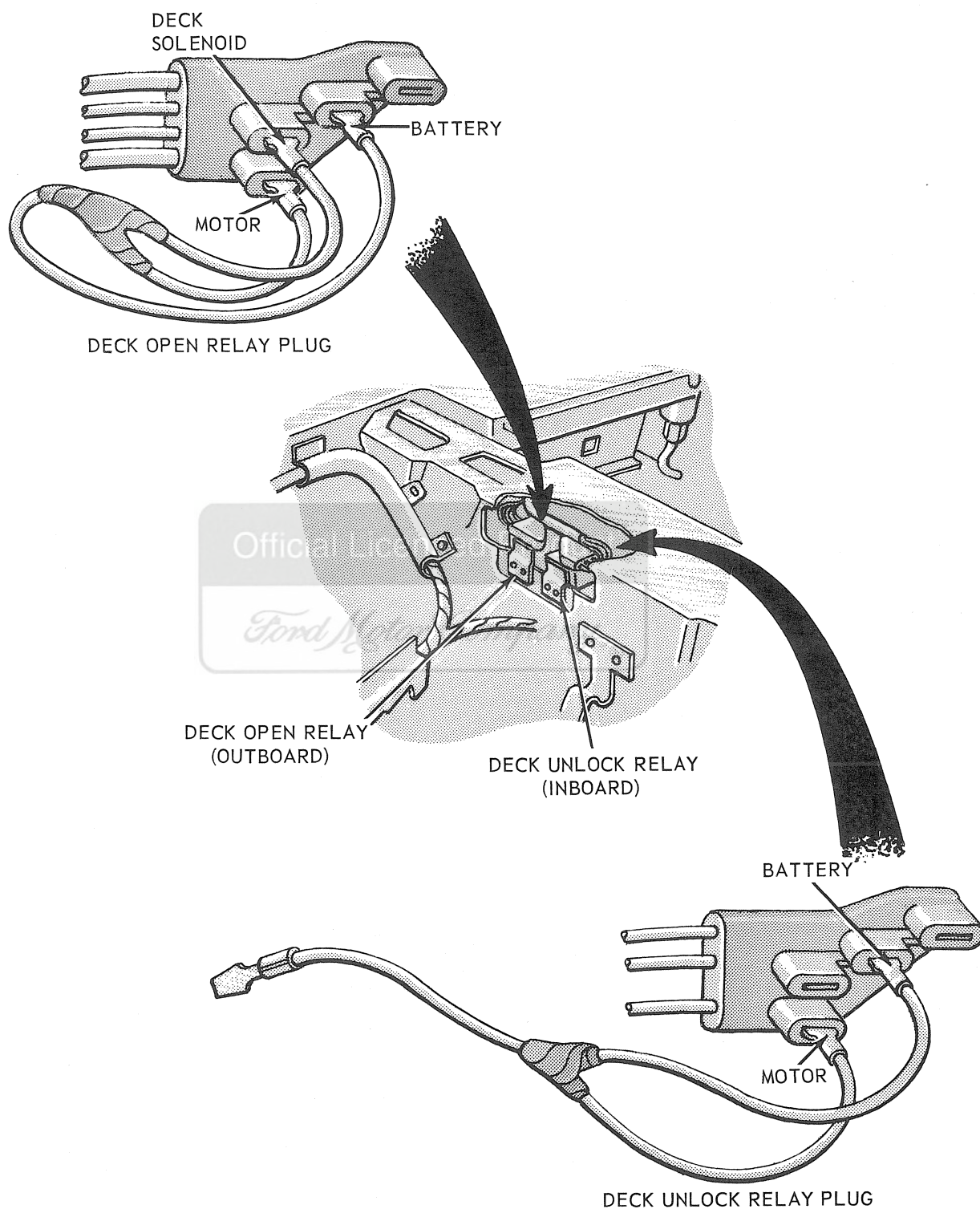
2. Energize the deck unlock motor directly through the multiple plug with the jumper wire (Fig. 2-17). If the motor does not operate, it will

be necessary to mechanically unlock the deck lid. (This is covered under "Mechanically Opening and Raising of Deck Lid.")

3. After the deck lid is unlocked, actuate the top control switch to determine if the deck lid will open in the normal manner.

4. If the deck lid will not open by operating the top control switch, remove the multiple plug from the deck open relay (Fig. 2-17).

5. Energize the top and deck motor and pump directly through the multiple plug with the jumper wire (Fig. 2-17). If the deck motor does not operate, it will be necessary to mechanically open the deck lid.



ALTERNATE METHOD OF OPENING DECK LID
USING FABRICATED JUMPER WIRE (12 GA.)

FIG. 2-17—Unlocking and Opening Deck Lid With Jumper Wire

7 MECHANICAL OPENING AND RAISING THE DECK LID

1. Raise the car.
2. From the underside of each rear wheel house, remove each deck lid lock nut retaining screw.
3. From behind the rear seat cushion, disconnect the deck lid unlock relay to prevent damage to the lock nut assembly.
4. Lift the forward edge of the

deck lid approximately 1 inch, then actuate the top control switch to complete the opening of the deck lid. If the deck lid hydraulic cylinders fail to operate, the deck lid can be manually opened as follows:

- a. Unlock the deck lid with the top control switch or with the above procedure.

- b. From underneath the rear cross-member, remove the deck lid hydraulic cylinder attaching screws (both sides).

- c. Lift the deck lid from the body opening manually. If the deck lock nuts have been released from the wheel housings, the nut and housing portion of the locks will remain attached to the deck lid lock screws.

8 LIMIT SWITCH ADJUSTMENTS

LIMIT SWITCHES

Accurate adjustment of all the limit switches is very important to assure smooth operation and to maintain continuity of the deck lid cycles. When checking a switch, the switch should first be checked for proper function and then adjusted as outlined in the following procedures. A pair of insulated test leads, a jumper wire, and a self-powered D.C. test light are essential tools for testing and adjusting switches.

A self-powered test light should

be used to check the electrical components. Do not use the car battery for the power source, because the jumping of a switch will cause the cycle to continue and possibly the cycle will go out of phase.

Refer to the following figures for the correct adjustments of the limit switches.

1. Deck Lid Limit Switches No. 1 and No. 2, Figure 2-18.
2. Deck Lock Limit Switch, Figure 2-19.
3. Top Up Limit Switch, Figure 2-20.

4. Back Panel Retract Limit Switch, Figure 2-21.

5. Back Panel Erect Limit Switch, Figure 2-22.

6. Top Lock Cut-Off Limit Switch, Figure 2-23.

7. Top Down Limit Switch, Figure 2-24.

8. Top Lock Limit Switch No. 1 Adjustment, Figure 2-25.

9. Top Lock Limit Switch No. 2 Adjustment, Figure 2-26.

10. Top Unlock Limit Switch, Figure 2-27.

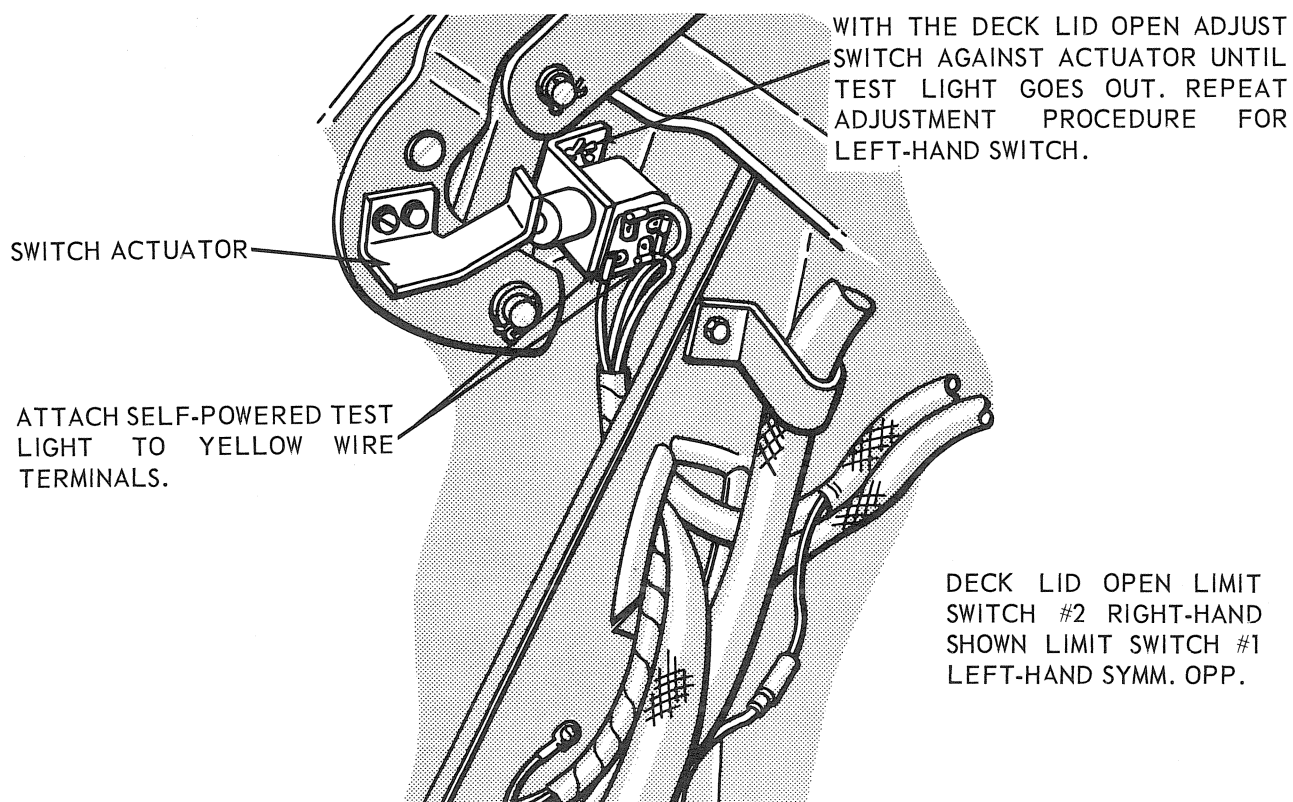


FIG. 2-18—Deck Lid Limit Switch No. 1 and No. 2 Adjustment

IF THE DECK LID SOLENOID VALVE AND TOP MOTOR AND PUMP DO NOT BECOME ENERGIZED, ADJUST THE SWITCH DOWNWARD SLIGHTLY. IF THE DECK LID SOLENOID AND TOP MOTOR AND PUMP ENERGIZE BEFORE THE DECK LID IS UNLOCKED ADJUST THE SWITCH UPWARD SLIGHTLY.

ADJUST SWITCH SLIGHTLY UPWARD OR DOWNWARD UNTIL SIMULTANEOUS DECK LID UNLOCKING AND DECK LID OPENING IS ACHIEVED.

BEGIN BY SETTING SWITCH AT MID-POINT OF ADJUSTMENT SLOT.

ATTACH SELF-POWERED TEST LIGHT TO RED WIRE TERMINALS WITH DECK LID OPEN-SWITCH CONTACTS ARE CLOSED-TEST LIGHT ON.

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FIG. 2-19—Deck Lock Limit Switch Adjustment

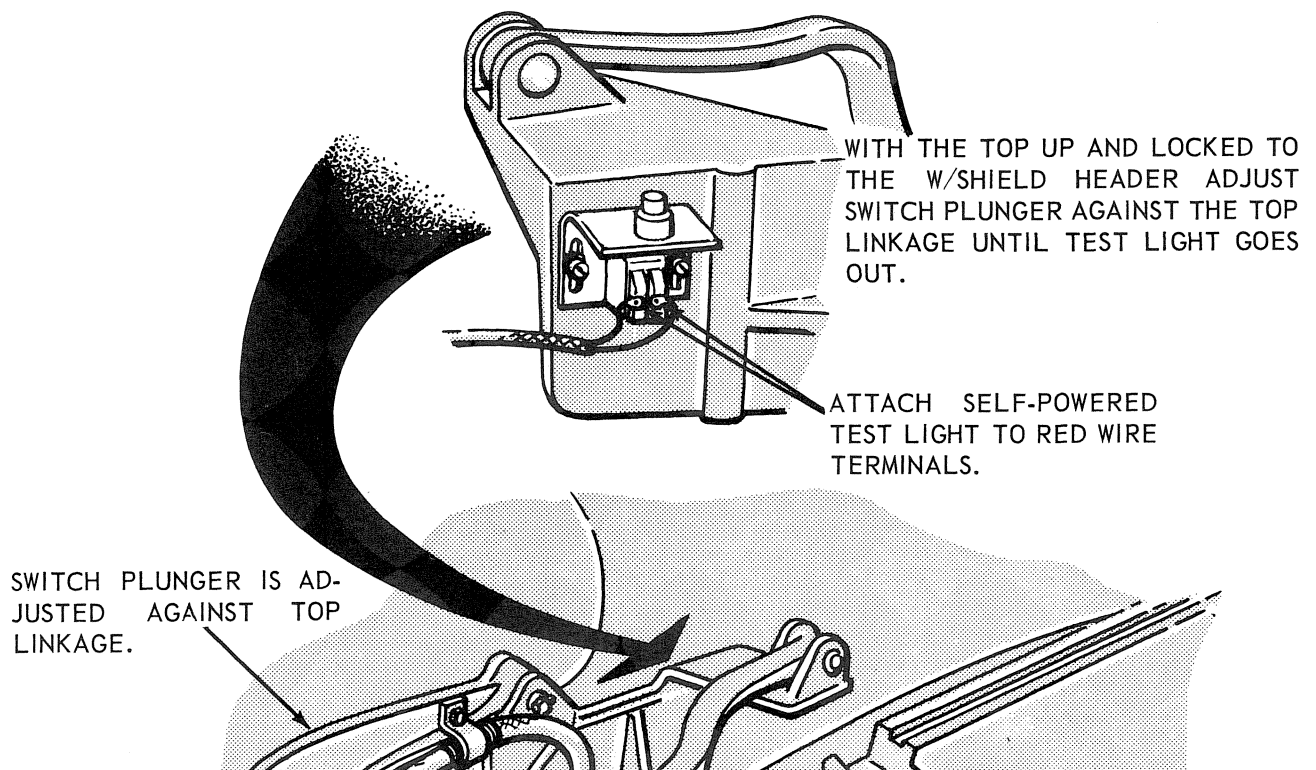


FIG. 2-20—Top Up Limit Switch Adjustment

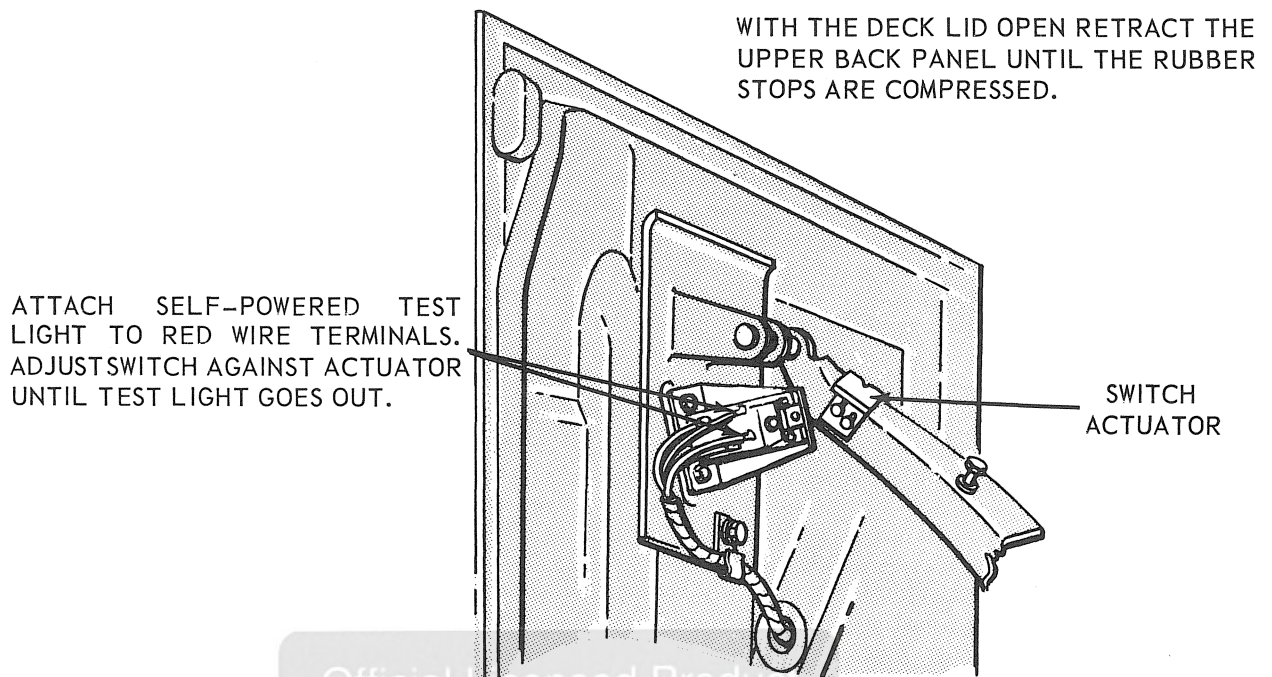


FIG. 2-21—Back Panel Retract Limit Switch Adjustment

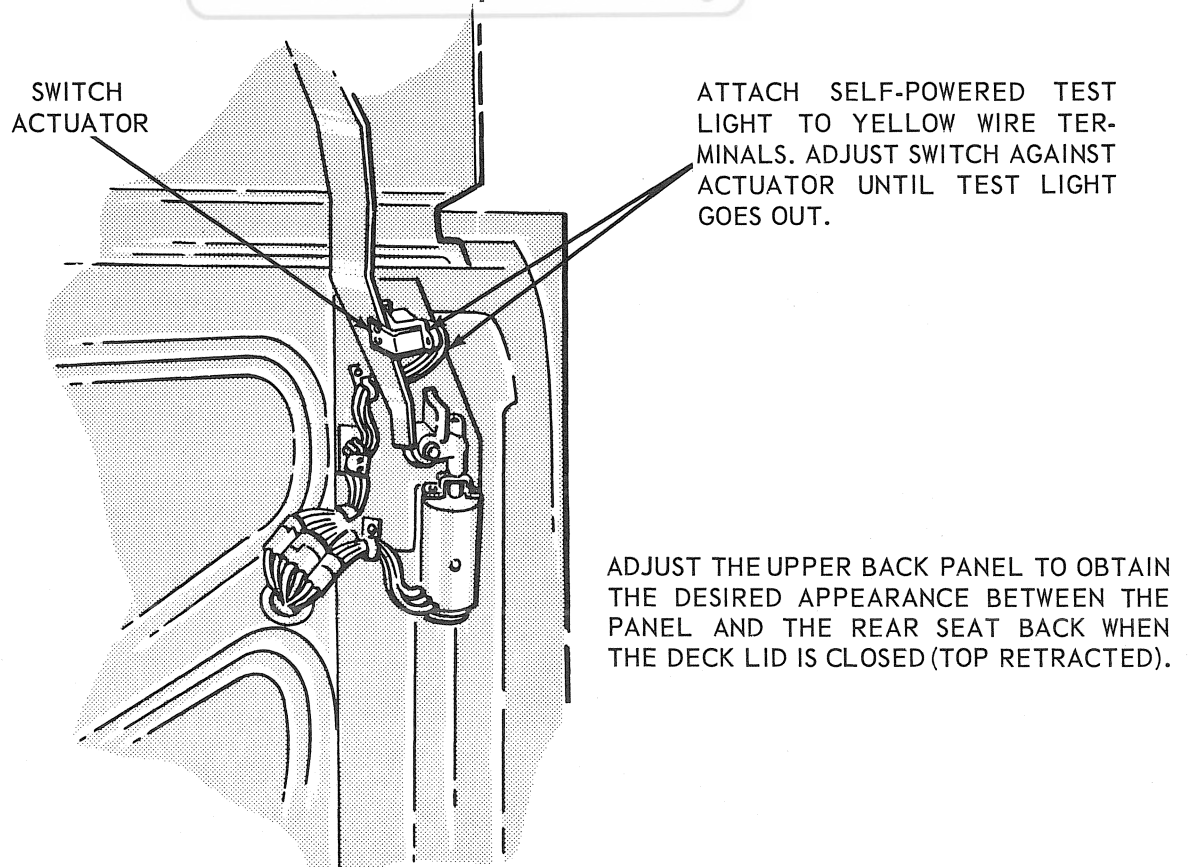


FIG. 2-22—Back Panel Erect Limit Switch Adjustment

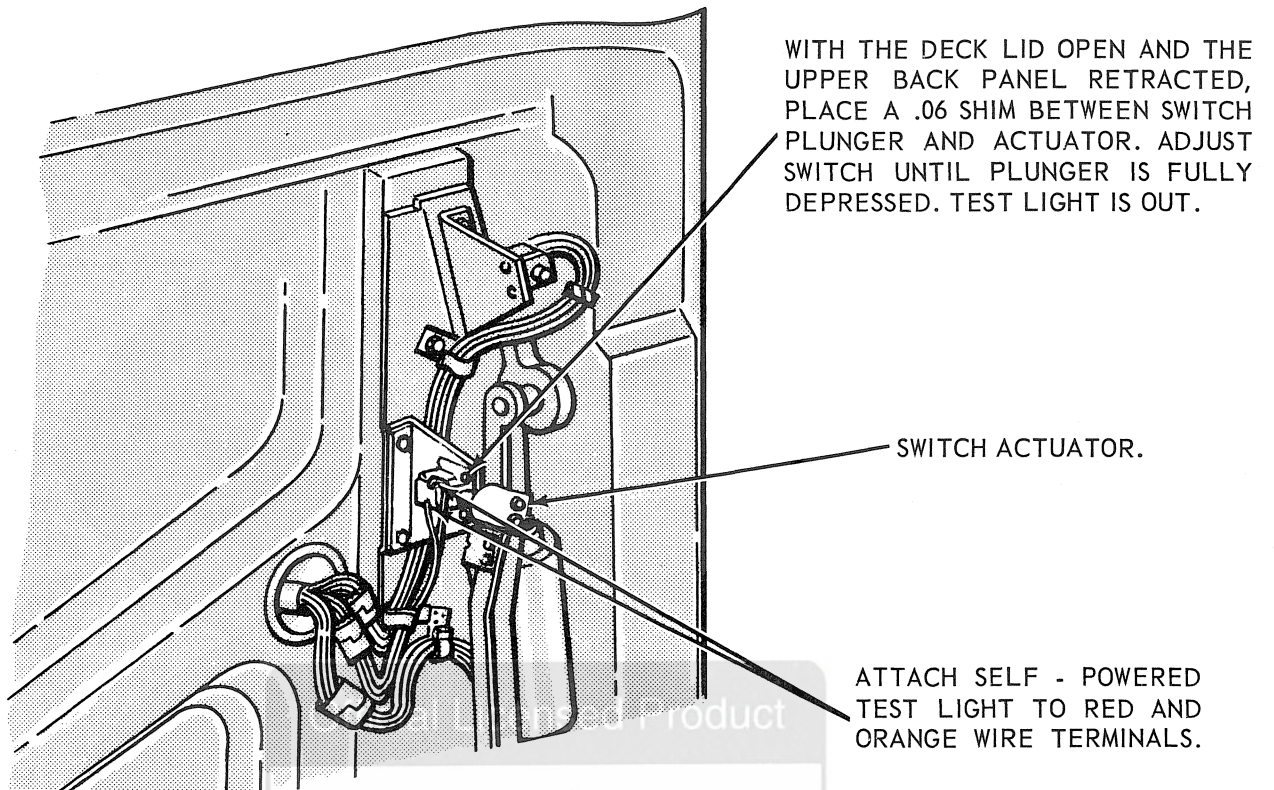


FIG. 2-23—Top Lock Cut-Off Limit Switch

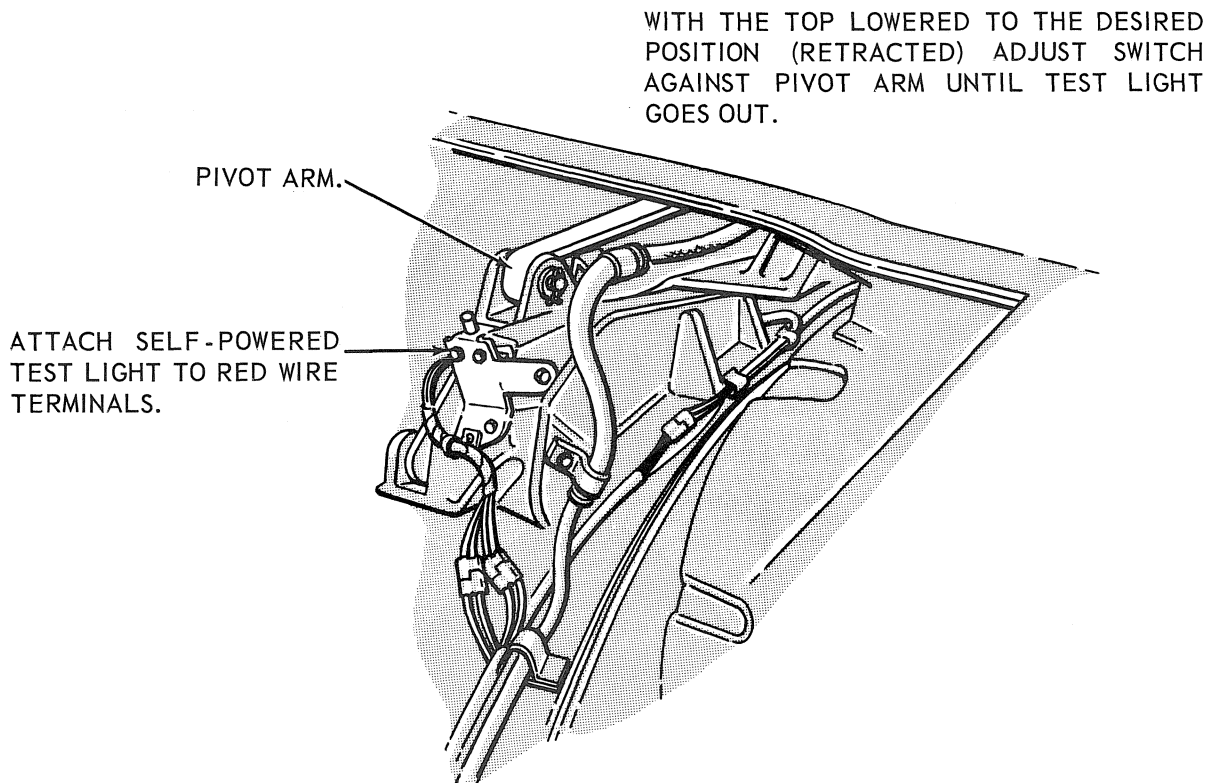
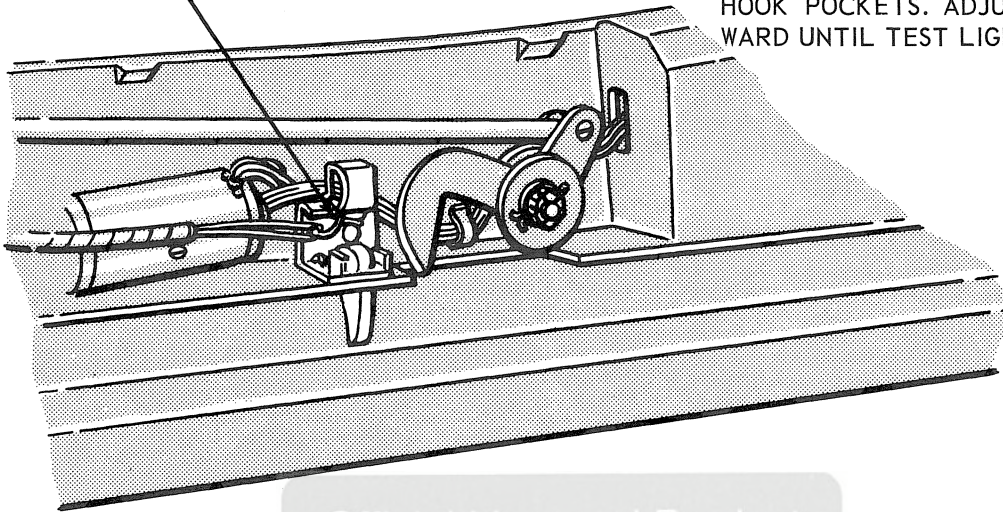


FIG. 2-24—Top Down Limit Switch Adjustment

ATTACH SELF-POWERED TEST LIGHT TO YELLOW & RED WIRE TERMINALS.

RAISE THE TOP UNTIL THE NO. 1 BOW RESTS FIRMLY ON THE WINDSHIELD HEADER AND THE LOCK HOOKS ARE ALIGNED WITH THE HOOK POCKETS. ADJUST THE SWITCH FORWARD UNTIL TEST LIGHT COMES ON.



Official Licensed Product

FIG. 2-25—Top Lock Limit Switch No. 1 Adjustment

ATTACHED SELF-POWERED TEST LIGHT TO RED WIRE TERMINALS.

OPERATE THE TOP LOCK MOTOR UNTIL THE LOCKS ARE FULLY LOCKED. ADJUST THE SWITCH AGAINST THE ACTUATOR UNTIL THE SWITCH PLUNGER IS FULLY DEPRESSED. TEST LIGHT IS ON.

SWITCH ACTUATOR.

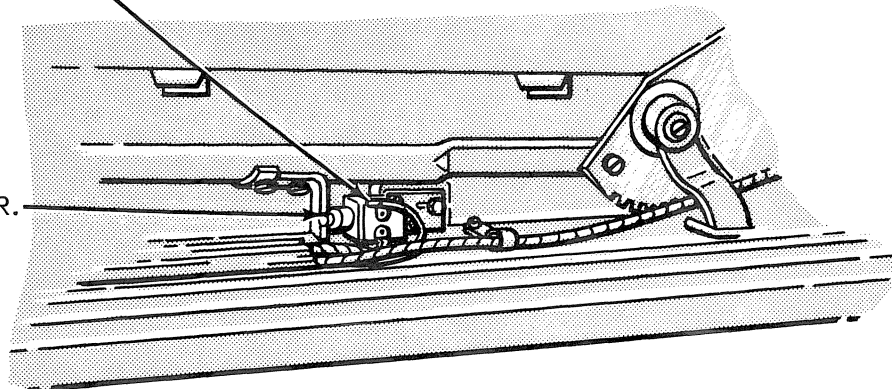


FIG. 2-26—Top Lock Limit Switch No. 2 Adjustment

OPERATE THE TOP LOCK MOTOR UNTIL THE LOCKS ARE FULLY UNLOCKED AND THE LOCK ARM IS FIRMLY SEATED TO THE RUBBER STOP.

PLACE A .06 SHIM BETWEEN THE SWITCH PLUNGER AND THE ACTUATOR. ADJUST SWITCH AGAINST ACTUATOR UNTIL SWITCH PLUNGER IS FULLY DEPRESSED. TEST LIGHT OUT.

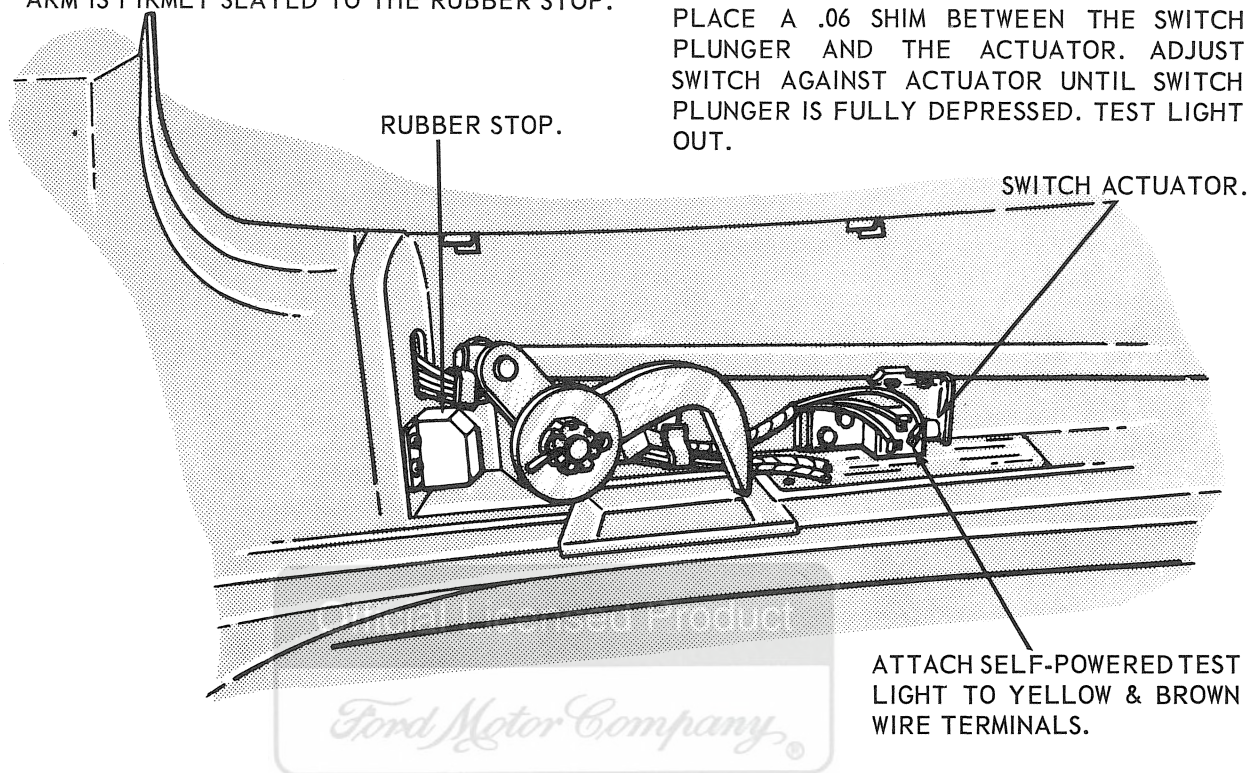


FIG. 2-27—Top Unlock Limit Switch Adjustment

9 TOP ADJUSTMENTS

The proper alignment of both the top linkage and the locking mechanism is necessary to maintain satisfactory operation of the convertible top and deck lid. Top linkage adjustments, as well as individual lock adjustments, have been provided for proper alignment. Before performing any adjustments, the top linkage should be examined to determine if any of the linkage is bent or binding. Faulty linkage should be replaced or freed from any binds.

The convertible top alignment adjustments should be made with all of the side windows lowered. The back window should be unzipped, carefully rolled up, and secured in position with the tabs provided. After proper top alignment is obtained, the vent, front and rear door windows should be checked and aligned if necessary.

NO. 1 BOW ADJUSTMENT

Adjustment of the No. 1 Bow fore or aft is provided for proper alignment with the windshield header (Fig. 2-28).

1. Mark the present location of the No. 1 Bow to the side rail. This will provide a measuring point from which to adjust.

2. Raise the top approximately 6 inches above the windshield header and remove the right and/or left front side rail weatherstrips.

3. Loosen the screws securing the No. 1 Bow to the side rails and move the bow fore or aft as required to obtain proper alignment at the windshield header.

4. Tighten the screws and replace the side rail weatherstrips. **If the top material is stretched too tightly, the No. 1 Bow will not close and lock to the windshield header properly.**

NO. 1 BOW LOCKING HOOK ADJUSTMENT

The top locking hooks can be adjusted up or down to provide proper sealing between the No. 1 Bow and the windshield header (Fig. 2-28).

1. Remove the No. 1 Bow access cover.

2. Loosen the hook pivot setscrew at the die cast base of the locking hook. **Do not remove the cotter pin securing the lock pivot.**

3. Turn the nut and hook pivot clockwise for a tighter seal at the windshield header and counterclockwise to prevent stalling of the lock motor before the hooks are firmly engaged.

4. Tighten the setscrew, being sure that it engages one of the four slots on the hook pivot.

5. Install the No. 1 Bow access cover.

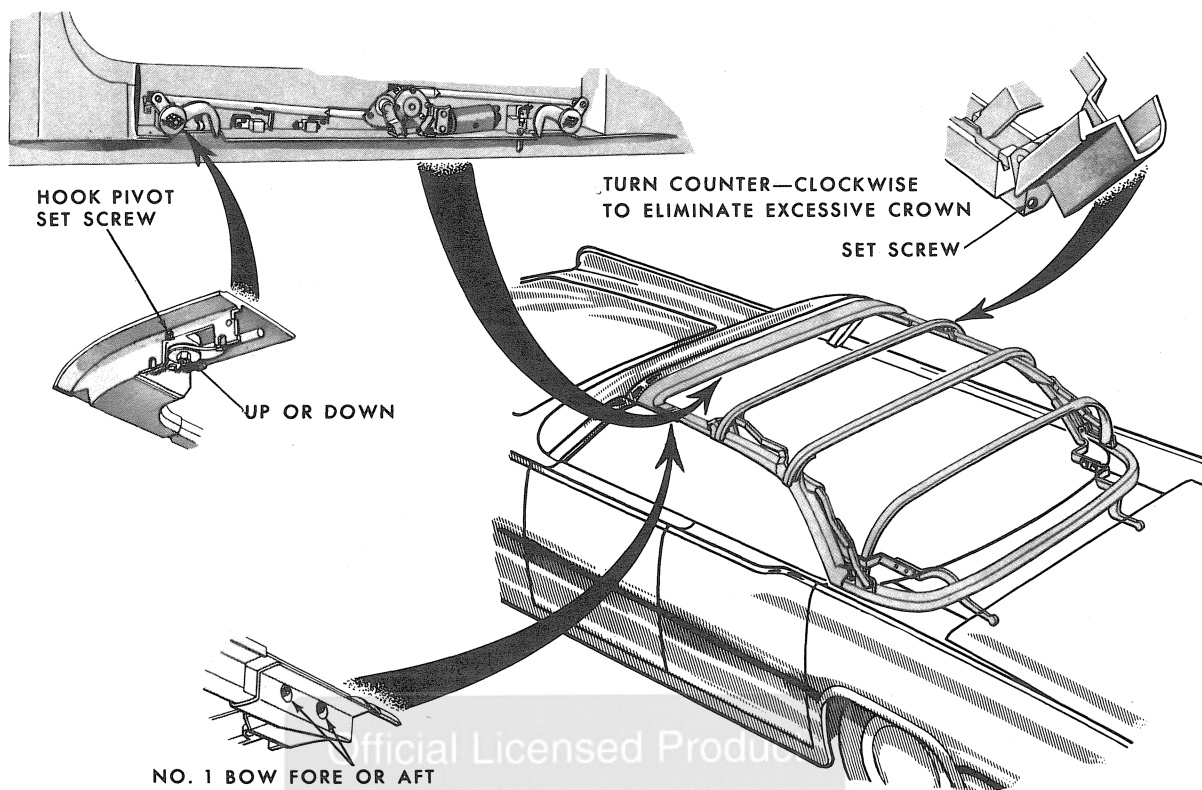


FIG. 2-28—No. 1 Bow and Lock Hood Adjustment

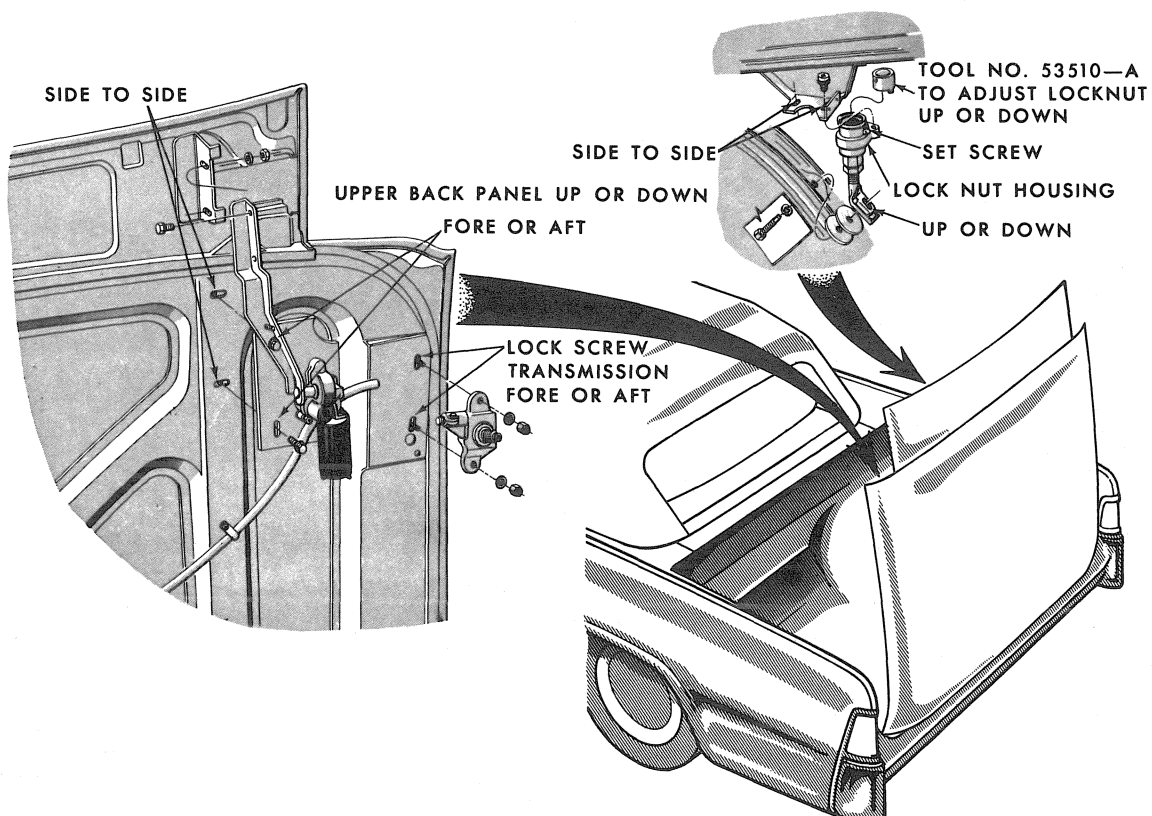


FIG. 2-29—Upper Back Panel, Deck Lid Lock Nut and Transmission Adjustment

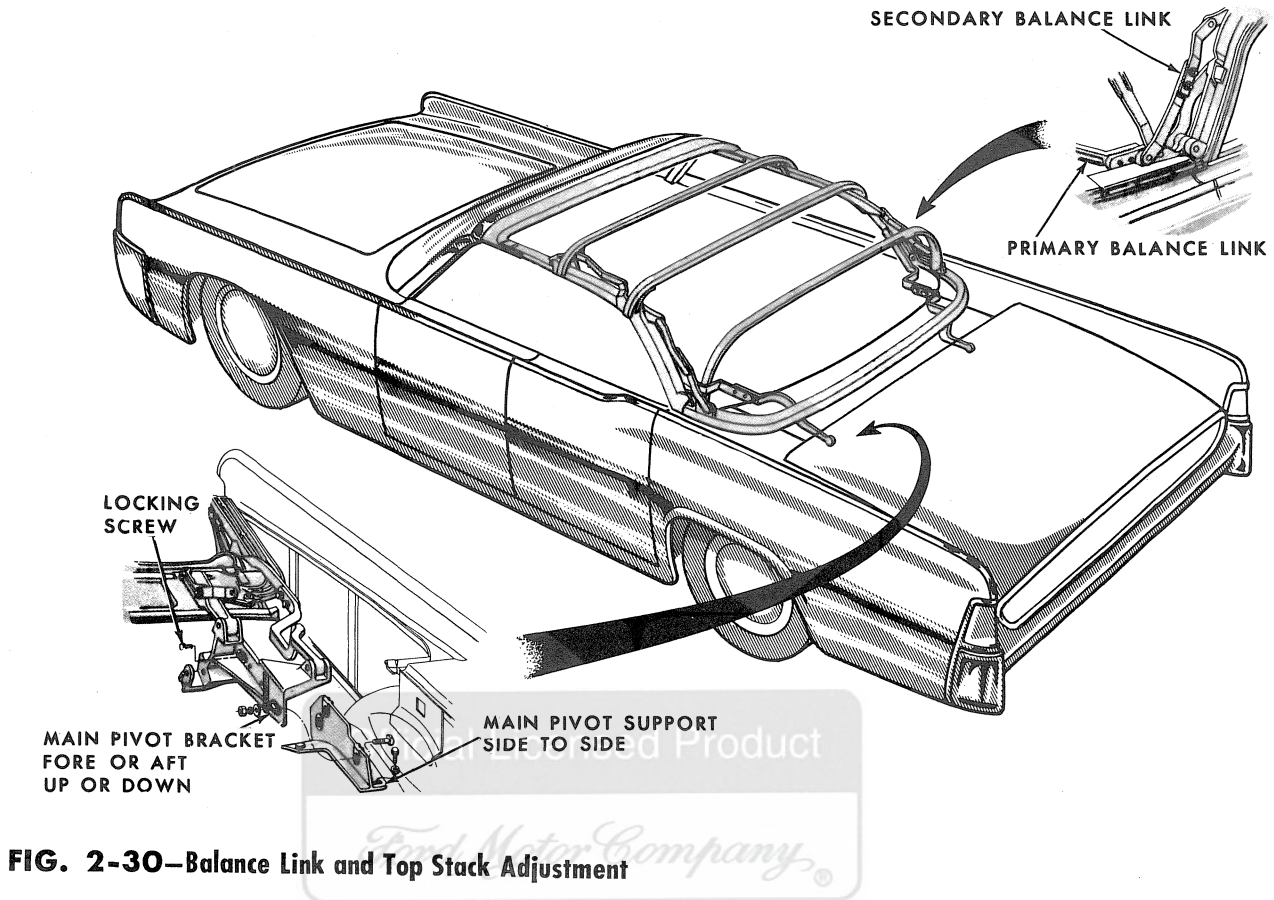


FIG. 2-30—Balance Link and Top Stack Adjustment

DECK LID LOCK NUT AND TRANSMISSION ADJUSTMENT

The lock screw transmission assembly is adjustable fore or aft (Fig. 2-29).

1. Loosen the nuts attaching the transmission assembly to the deck lid, shift the transmission for proper alignment with the lock nut, and tighten the attaching nuts. The lock nut assembly is adjustable from side to side.

2. Loosen the screws attaching the lock nut to the quarter panel bracket, shift the lock nut for proper alignment with the lock screw transmission and tighten the attaching screws. The lock nut housing is adjustable up or down.

3. Loosen the jam nut on the foot of the lock nut assembly.

4. Raise or lower the lock nut housing until the "O" ring is centrally located in the housing support. Tighten the jam nut.

The lock nut is adjustable up or down for proper thread engagement with the lock screw.

1. Loosen the lock nut housing setscrew.

2. Turn the lock nut up or down

using Tool 53510-A, to engage the lock screw threads properly.

3. Tighten the lock nut housing setscrew.

Do not attempt locking the deck lid unless the locknut housing setscrew is securely tightened.

BALANCE LINK ADJUSTMENT (PRIMARY)

Adjustment of the primary balance link fore or aft is provided for parallel alignment of the rear side rail to the rear door glass.

1. Loosen the two locking screws and move the link to the proper position; tighten the screws. **It may be necessary to partially retract the top before making the adjustment (Fig. 2-30).**

BALANCE LINK ADJUSTMENT (SECONDARY)

The secondary balance link controls the sag or crown of the side rail assembly (Fig. 2-30).

To increase the crown:

1. Retract the top halfway.
2. Loosen the two secondary balance link locking screws.
3. Shorten the balance link adjust-

ment.

To increase the sag:

1. Lengthen the balance link adjustment. After performing any balance link adjustments, check the alignment of the door windows to the top to be sure the windows operate freely and make a good seal with the side rail weatherstrips.

UPPER BACK PANEL ADJUSTMENT

The upper back panel adjustment must not be made until after the deck lid is aligned to the body opening. The upper back panel is adjustable fore or aft, and side to side (Fig. 2-29).

1. Loosen the screws securing the upper back panel lift brackets to the deck lid.

2. Shift the upper deck panel to the proper position and tighten the screws. To obtain up or down adjustment:

- a. Loosen the screws securing the lift brackets to the upper back panel.
- b. Shift the upper back panel to the proper position and tighten the screws.

MAIN PIVOT BRACKET ADJUSTMENTS

Because movement of the main pivot bracket will disturb several adjustments, move this bracket only after other adjustments fail to solve a specific problem.

The main pivot bracket is adjustable fore or aft and up or down to obtain alignment of the top with the rear edge of the rear door glass (Fig. 2-30).

Before attempting to adjust the

main pivot bracket, remove the locking screw which was installed in production to hold the original adjustment. Main pivot bracket adjustment is not generally required except in cases of severe collision damage.

1. Loosen the screws securing the main pivot bracket to the support, move the bracket and tighten the screws. To obtain side to side adjustment:

2. Loosen the screws securing the

support to the floor pan, move the support and tighten the screws. Check alignment of the top to the windows and windshield header after making any adjustment of the main pivot bracket.

SIDE RAIL CROWN ADJUSTMENT

A minor adjustment for excessive crown at the joint of the intermediate side rail and the front side rail can be made by rotating the set screw in the front end of the intermediate rail counterclockwise.

10 SPECIFICATIONS**FLUID OR LUBRICANT CAPACITIES**

Fluid or Lubrication Points	Fluid or Lubricant	Capacity
Convertible Top Reservoir	B7A-19542	As Required

CIRCUIT BREAKERS

Amp. Rating	Function	Location
10	Control Feed Circuit	Fuse Box
15	Deck Lock Motor Ground	Right Quarter Panel
15	Upper Back Panel Motor Ground	Right Quarter Panel
15	Top Lock Motor Ground	Right Quarter Panel
50	Motor Relay Feed (Power Circuit)	Behind Right-Hand Cowl Panel near Glove Box

MOTORS

Name and Function	Location
Deck Lock Motor (Operates Deck Lid Lock Screws)	Center of Deck Lid
Top/Deck Motor and Pump (Operates Top and Deck Lid)	Right Quarter Panel
Top Lock Motor (Operates Top Locks)	No. 1 Bow—Right Center
Upper Back Panel Motor (Operates Upper Back Panel)	Forward, Left Side of Deck Lid

RELAYS

Name and Function	Location
Deck Close Relay (Actuates top/deck motor)	Relay Panel Right Quarter—Top Row
Deck Lock Relay (Actuates deck lock motor)	Relay Panel Right Quarter—Bottom Row
Deck Open Relay (Actuates top/deck motor)	Rear Seat-Back Support Right Side—Outboard
Deck Unlock Relay (Actuates deck lock motor)	Rear Seat-Back Support Right Side—Inboard
Top Down Relay (Actuates top/deck motor)	Relay Panel Right Quarter—Top Row
Top Lock Relay (Actuates top lock motor)	Relay Panel Right Quarter—Bottom Row
Top Unlock Relay (Actuates top lock motor)	Relay Panel Right Quarter—Top Row
Top Up Relay (Actuates top/deck motor)	Relay Panel Right Quarter—Bottom Row
Upper Back Panel Erect Relay (Actuates back panel motor)	Relay Panel Right Quarter—Top Row
Upper Back Panel Retract Relay (Actuates back panel motor)	Relay Panel Right Quarter—Bottom Row

SOLENOID VALVES

Name and Function	Location
Deck Lid Solenoid Valve (Controls hydraulic fluid pressure to deck lid)	Right Quarter—Rear of Top/Deck Motor and Pump
Top Solenoid Valves (2) (Controls hydraulic fluid pressure to top)	Right Quarter—Forward of Top/Deck Motor and Pump

SWITCHES

Name and Function	Location
Deck Lock Limit Switch (Actuated by bracket on deck lid) Part of deck lid close circuit in the top retract cycle and erect cycle. Part of deck lid open circuit in the top retract cycle and erect cycle.	Deck lock support bracket right side.
Deck Open Limit Switch No. 1 (Actuated by bracket on deck lid hydraulic linkage) Part of deck lid unlock circuit and deck lid open circuit in the top retract cycle. Part of upper back panel open circuit.	Lower back panel at left deck lid lift arm.
Deck Open Limit Switch No. 2 (Actuated by bracket on deck lid hydraulic linkage) Part of deck lid unlock circuit and deck lid open circuit in top erect cycle. Part of top erect circuit.	Lower back panel at right deck lid lift arm.
Top Control Switch (Actuated manually) Part of control circuit.	Instrument Panel—Lower left of steering column
Top Down Limit Switch (Actuated by right rear side rail) Part of top retract circuit. Part of deck lid close circuit and deck lid lock circuit in the top retract cycle. Part of deck lid unlock circuit and deck lid open circuit in the top erect cycle.	Main pivot bracket—right side.
Top Lock Limit Switch No. 2 (Actuated by bracket on lock rod) Part of top erect circuit. Part of back panel close circuit.	No. 1 Bow Left Side—Inboard Switch
Top Unlock Limit Switch (Actuated by bracket on lock rod) Part of unlock circuit. Part of top retract circuit.	No. 1 Bow Left Side—Outboard Switch
Top Up Limit Switch (Actuated by nylon lever arm) Part of top lock circuit.	Top Main Pivot Bracket—Right Hand
Upper Back Panel Erect Limit Switch (Actuated by bracket on upper back panel hinge mounting plate) Part of upper back panel erect circuit. Part of top lock circuit. Part of top unlock circuit.	Upper Back Panel Hinge Mounting Plate—Left Side.
Upper Back Panel Retract Limit Switch (Actuated by bracket on upper back panel hinge mounting plate) Part of upper back panel retract circuit. Part of deck lid close circuit and deck lid lock circuit in the top erect cycle. Part of deck lid unlock and deck lid open circuit in the top retract cycle.	Upper Back Panel Hinge Mounting Plate—Right Side.
Transmission Neutral Switch (Actuated by transmission selector) Part of control circuit.	Steering Column—Lower Portion Exterior mounted
Top Lock Cut Off Switch	At Left Upper Back Panel Hinge on Upper Back Panel
Top Lock Limit Switch No. 1	Right Side of No. 1 Cross Bow

PART 3

THUNDERBIRD

1 TOP OPERATION

The Thunderbird convertible top is lowered into and erected out of the luggage compartment. The cycles are automatic with the exception of manually locking or unlocking the windshield header clamps and opening or closing the rear window. The top operation is divided into the following two cycles:

A. TOP RETRACT CYCLE

1. Deck Lid Unlock
2. Deck Lid Open
3. Package Tray Extend
4. Top Retract
5. Deck Lid Close
6. Deck Lid Lock

B. TOP ERECT CYCLE

1. Deck Lid Unlock
2. Deck Lid Open
3. Top Erect
4. Package Tray Fold
5. Deck Lid Close
6. Deck Lid Lock

Hydraulic pressure is used to raise and lower both the top and the deck lid (Fig. 3-1). The hydraulic pressure is produced by a reversible electric motor and pump assembly, and the top and deck lid linkage are actuated by the hydraulic cylinders. Three electric-solenoid valves are placed in the hydraulic lines to control the flow of fluid to the desired cylinders.

The deck lid is unlocked and locked by jack screws (Fig. 3-2). A reversible motor is used to operate the 2 jack screws thru drive cables.

The package tray is extended and folded by a motor and transmission mounted to the tray right pivot arm.

The deck lock screw motor and tray motor are protected by a 15-ampere circuit breaker in the ground circuit. The hydraulic-pump motor (and the entire circuit) is protected by a 50-ampere circuit breaker in the feed circuit (Fig 3-4).

ALL CIRCUITS ARE PROTECTED BY NON-CYCLING CIR-

CUIT BREAKERS. THIS TYPE OF CIRCUIT BREAKER WILL NOT RESET ITSELF UNTIL THE CONTROL SWITCH IS RELEASED OR THE SHORT CIRCUIT REMOVED.

The power is supplied to the motors and solenoids thru 8 relays (6 of which are double-contact relays). Fig. 3-3 details the electrical circuits through the relays to the motors and solenoids. Fig. 3-4 shows the installation arrangement of the relays in the vehicle. The double-contact relays are used to close the power supply circuit to both a motor and the related solenoids (or the armature and field windings in the shunt-wound tray motor).

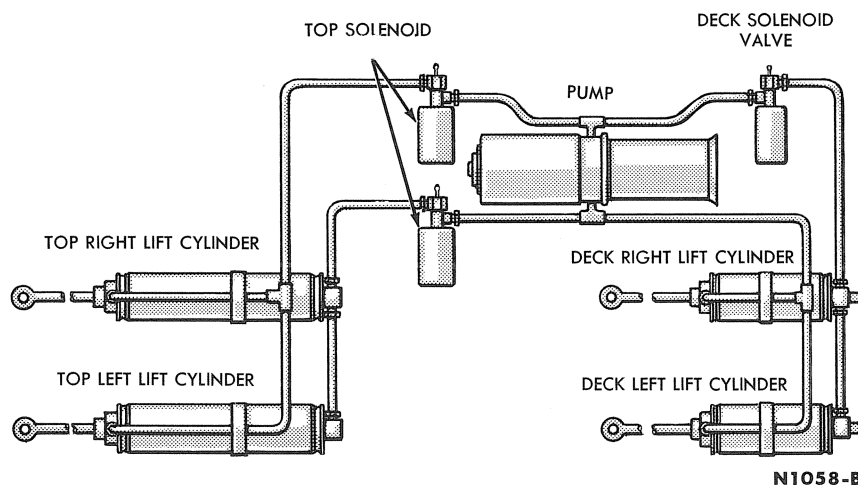
The instrument panel top control switch activates the top assembly (Fig. 3-5). A neutral switch relay is used to prevent top operation unless the transmission selector is placed in the neutral or park position. The ignition switch must be in the ON or ACC position and the neutral switch closed to energize the neutral switch relay, and close the control switch circuit (Fig. 3-4).

The top mechanism operation is controlled by 7 limit switches. These switches, actuated mechanically by the various panels or linkage, complete the supply circuit from the main control switch to the control relay coil windings. **The switch lead wires may be color coded violet and yellow or red, white and yellow, at the switch itself. However, the wire colors between connectors are as indicated in the circuit diagrams (Figs. 3-6 through 3-17).**

A luggage compartment light is mounted on the deck lid and is on whenever the deck lid is unlocked. The power source for this light is at the cigar lighter socket terminal in the console. The lower contacts of the deck lock limit switch control the function of the light (Figs. 3-6 and 3-7).

TOP RETRACT CYCLE

This cycle starts with the top in the erected position and the deck lid closed and both locked. The top is manually unlocked, the rear window unfastened and rolled, and the top control switch is pressed and held.



N1058-B

FIG. 3-1—Hydraulic System

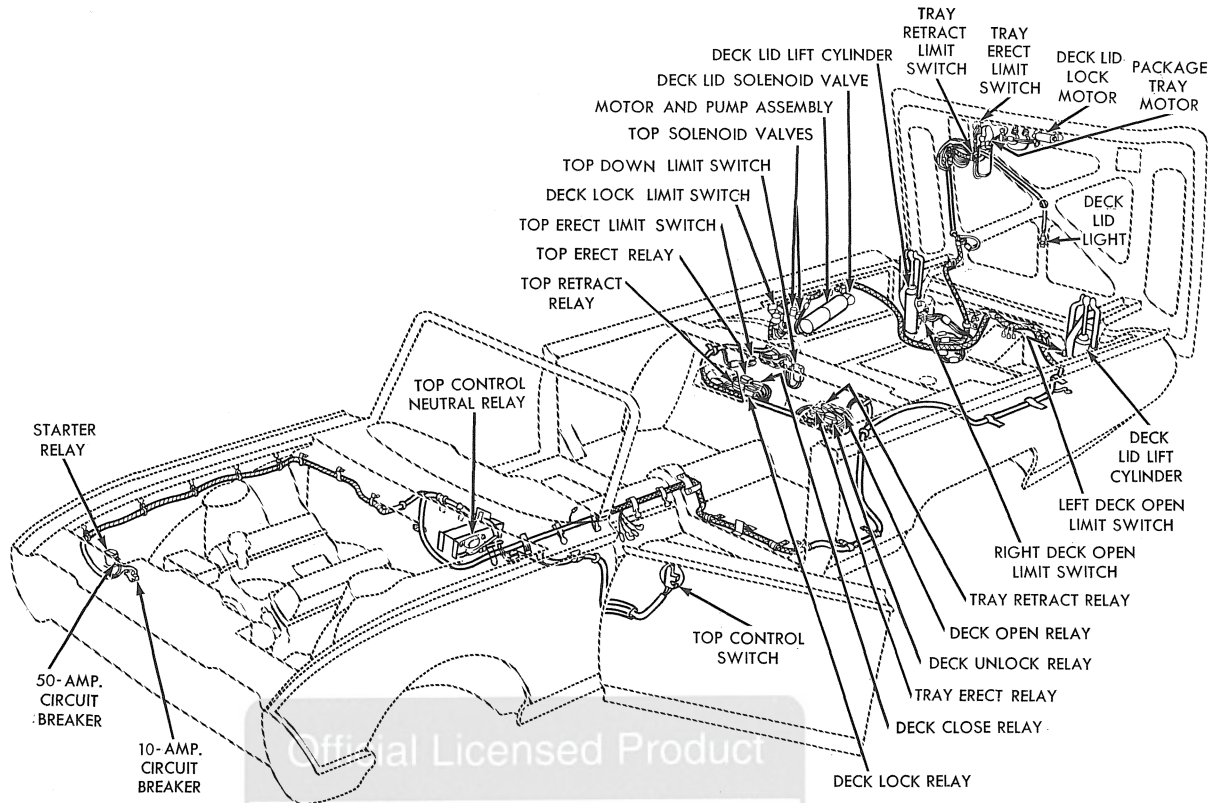


FIG. 3-2—Limit Switch Locations

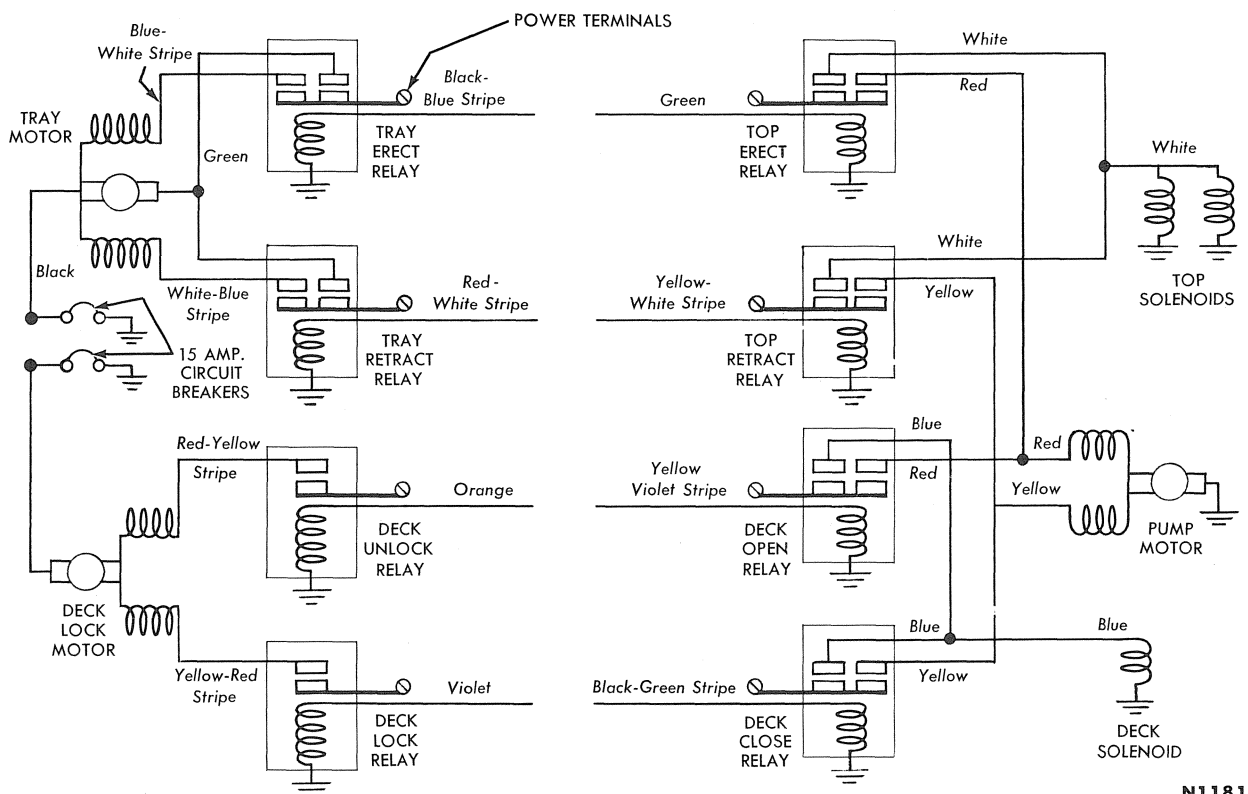


FIG. 3-3—Solenoid and Motor Feed Circuits

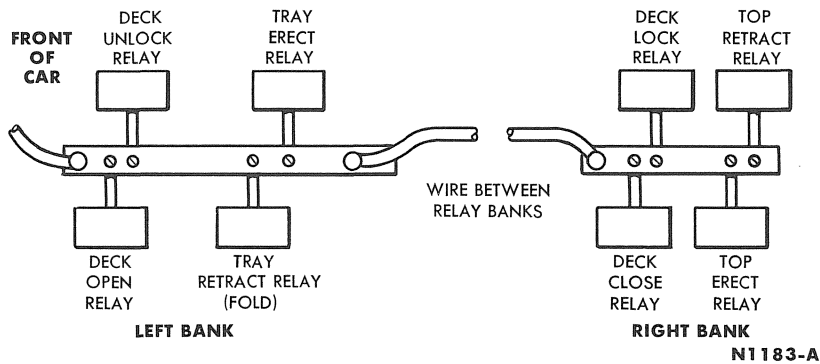


FIG. 3-4—Control Relay Locations

DECK LID UNLOCK

Current flows from the top control switch through the tray retract limit switch (Fig. 3-6), the left deck open limit switch, and the deck unlock power relay, and actuates the deck lock motor (Fig. 3-3).

DECK LID OPENING

The mechanical motion of unlocking the deck lid actuates the deck lock limit switch. As the switch plunger moves upward, contacts are closed to allow current to flow to the deck open power relay (Fig. 3-7), actuating the electric-hydraulic pump and deck solenoid valve (Fig. 3-3). Hydraulic pressure is delivered to the deck solenoid valve and then to the 2 deck cylinders, raising the deck lid.

PACKAGE TRAY EXTEND

When the deck lid is fully raised,

the left deck open limit switch plunger is depressed, opening the deck open circuit and closing a second set of contacts (Fig. 3-8). Current flows through the left deck open limit switch, the tray erect limit switch, to the tray erect power relay. The tray motor is actuated (Fig. 3-3) and extends the package tray so that it is parallel with the deck lid. The mechanical action of the tray, as it reaches its travel limit, actuates the tray erect limit switch which opens the tray erect limit switch which opens the top retract circuit (Fig. 3-9).

TOP RETRACT

Current flows from the tray erect limit switch through the top retract power relay, actuating the electric-hydraulic motor and top solenoid valves (Fig. 3-3). Hydraulic pressure is delivered

to the top solenoid valves and then to the 2 top cylinders, lowering the top. When the top reaches the fully retracted position, it actuates the top retract limit switch and de-energizes the top solenoid valves which shuts off the hydraulic pressure to the top cylinders. (Fig. 3-9)

DECK LID CLOSE AND LOCK

As the top retract limit switch opens and the top solenoid valves close, another set of contacts in the same switch close (Fig. 3-10), allowing current to flow to the deck lock relay and through the deck lock limit switch to the deck close power relay.

After the deck solenoid valve is actuated, hydraulic pressure is delivered to the 2 deck cylinders, lowering the deck lid. The deck lock motor locks the deck. As the deck lock screws draw the deck lid down, the deck lock limit switch is opened (Fig. 3-11), stopping the electric-hydraulic pump. Releasing the top control switch cuts off the current to the locking circuit.

TOP ERECT CYCLE

This cycle starts with the top in the luggage compartment and the deck lid closed and locked.

DECK LID UNLOCK

With the top control switch pressed and held, current flows through the top retract limit switch (Fig. 3-12), and the right deck open limit switch, to the deck unlock power relay, actuating the deck lock motor. The motor drives the deck lock screws and unlocks the deck lid.

DECK LID OPENING

The mechanical motion of unlocking the deck lid closes the deck lock limit switch (Fig. 3-13). Current flows to the deck open power relay, actuating the electric-hydraulic pump and the deck solenoid valves. Hydraulic pressure is delivered to the deck solenoid valve and then to the 2 deck cylinders, raising the deck lid. As the deck lid reaches the fully open position, the right deck open limit switch opens and stops the deck lock motor and electric-hydraulic pump.

TOP ERECT

When the right deck open limit switch opens, another set of contacts in the same switch close (Fig. 3-14). Current then flows through the top

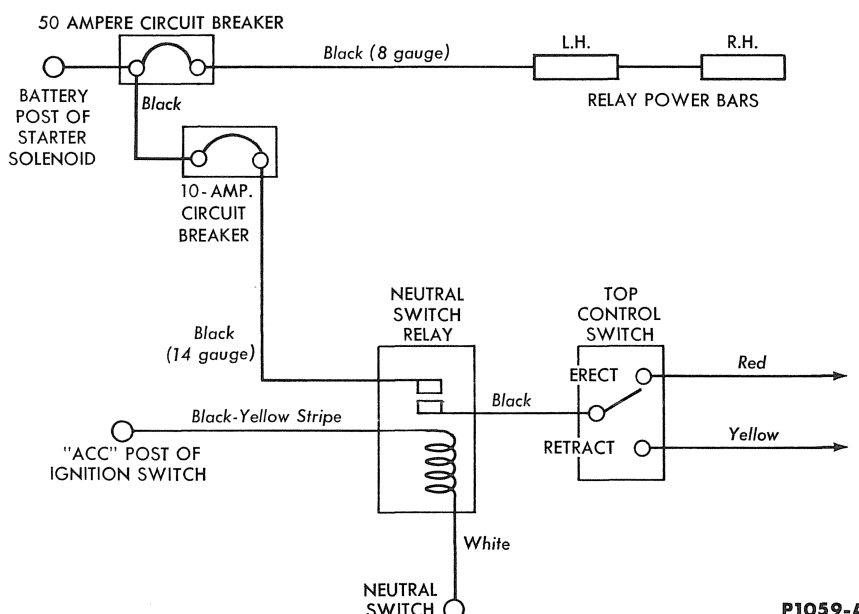
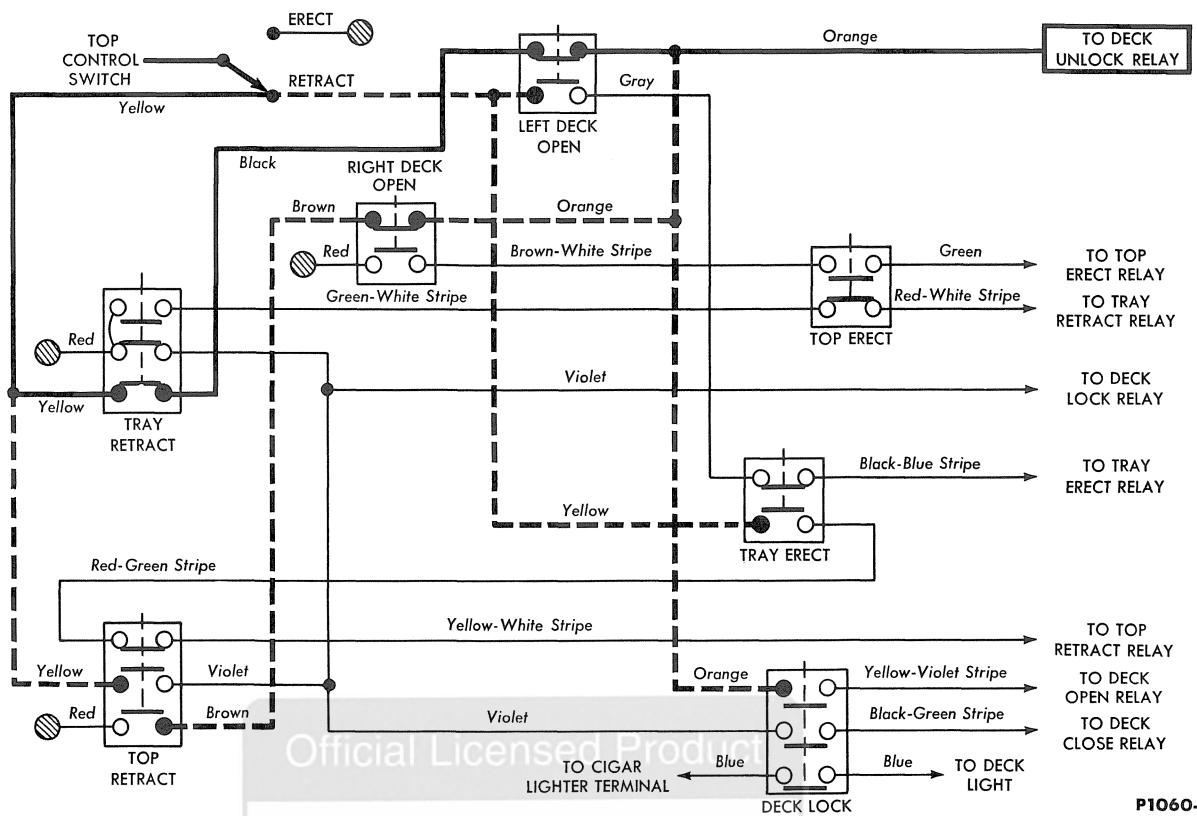
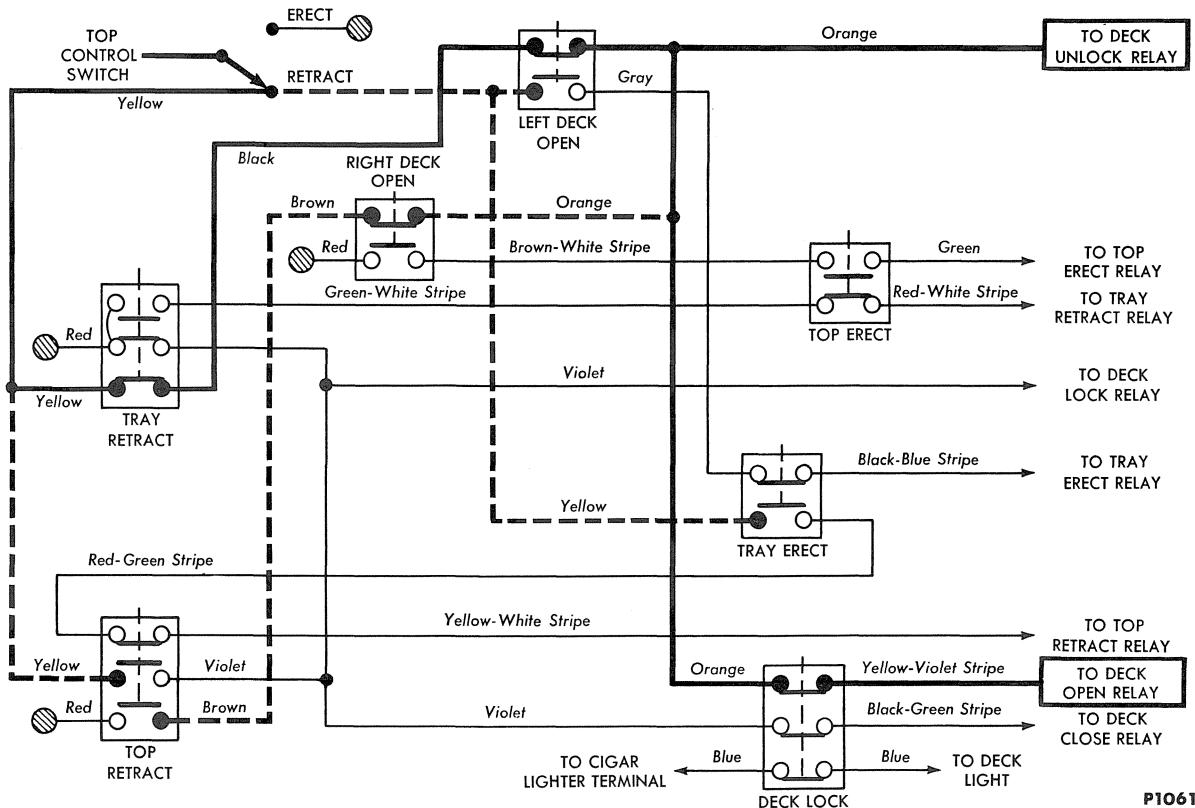


FIG. 3-5—Top Control Switch and Relay Power Circuits



P1060-A

FIG. 3-6—Deck Lid Unlock—Top Retract Cycle



P1061-A

FIG. 3-7—Deck Lid Open—Top Retract Cycle

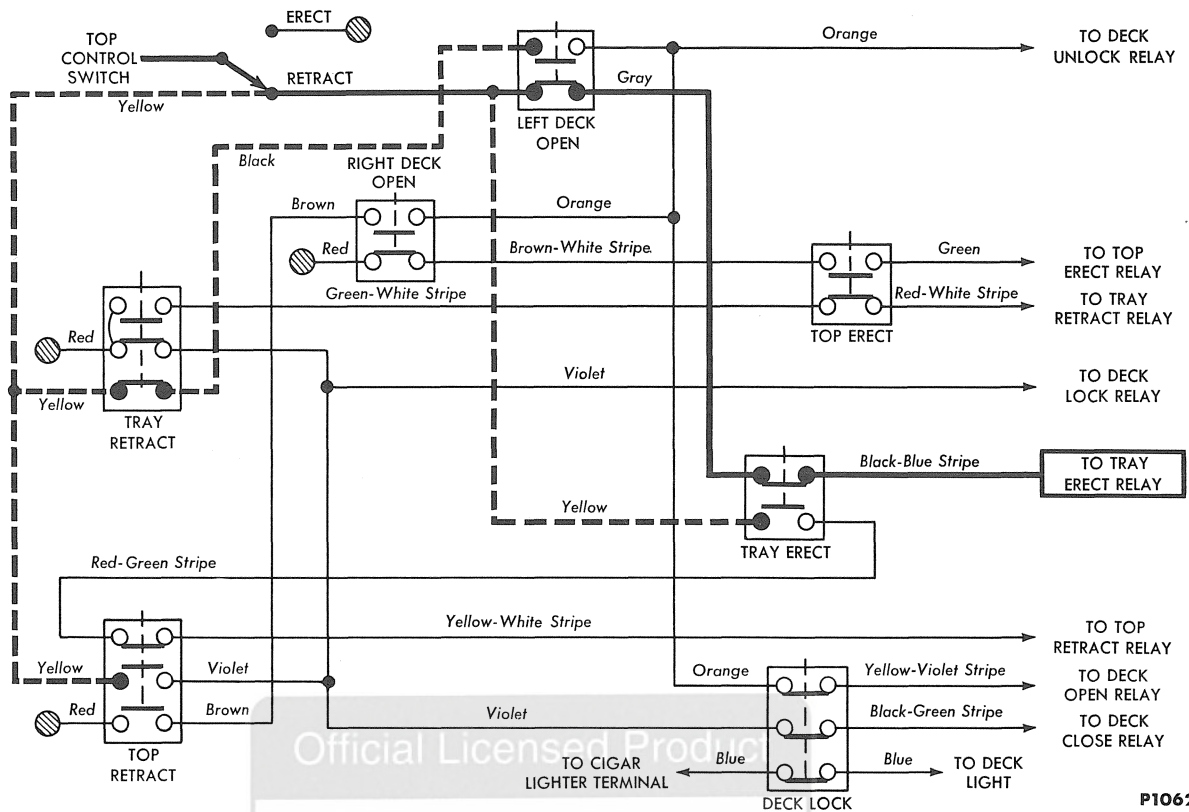


FIG. 3-8—Package Tray Extend—Top Retract Cycle

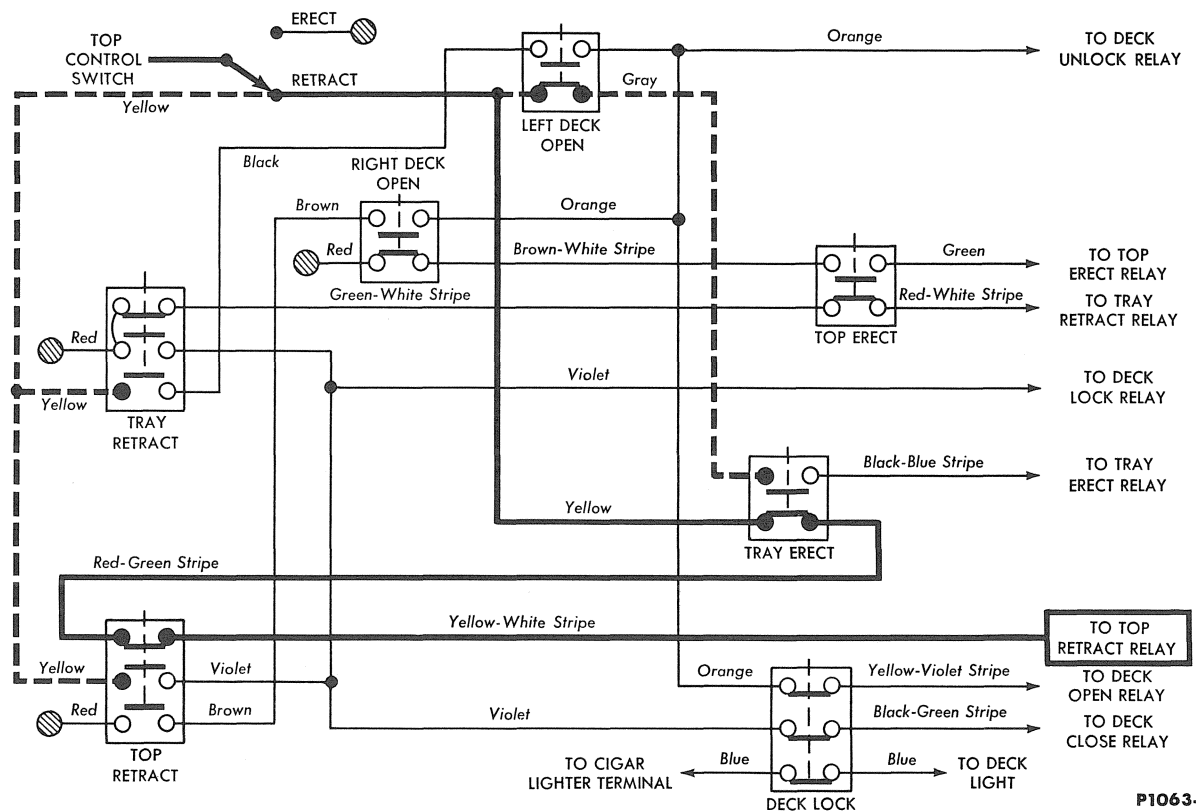


FIG. 3-9—Top Retract—Top Retract Cycle



Close—Top Retract Cycle



FIG. 3-11—Deck Lid Lock—Top Retract Cycle

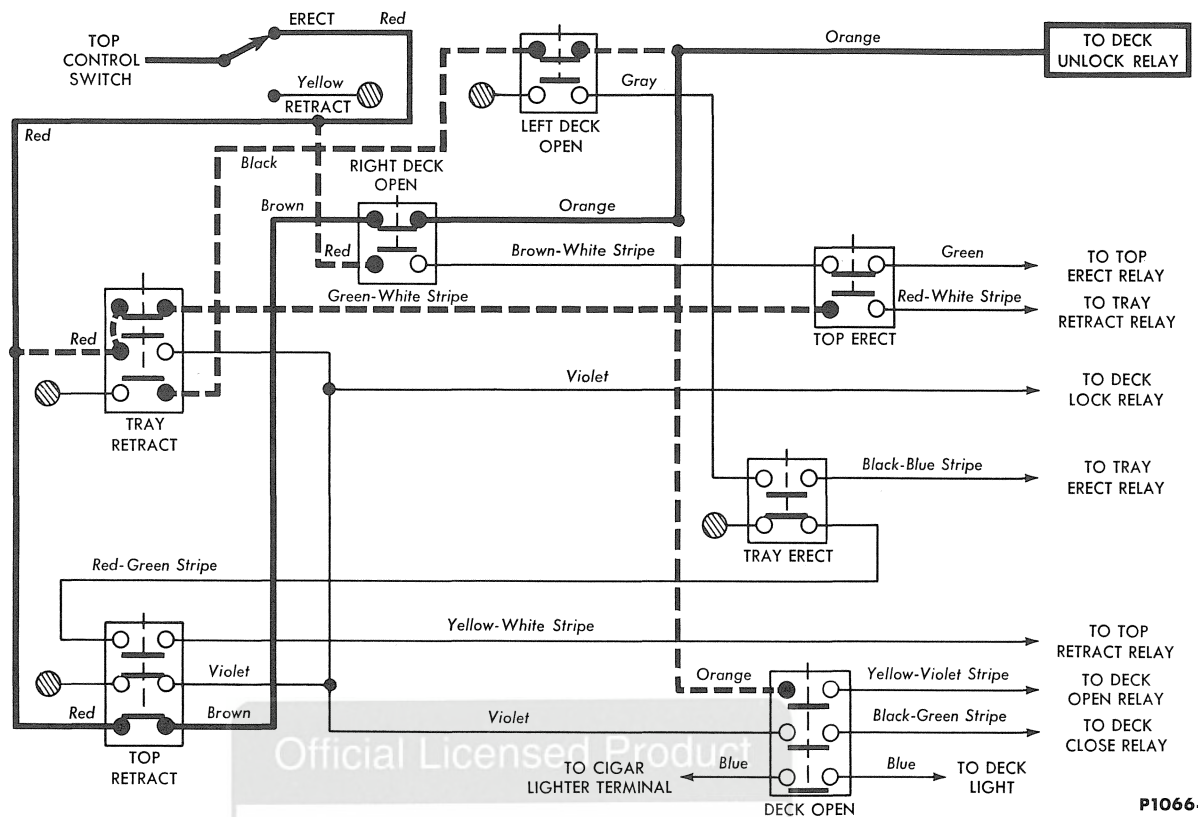


FIG. 3-12—Deck Lid Unlock—Top Erect Cycle

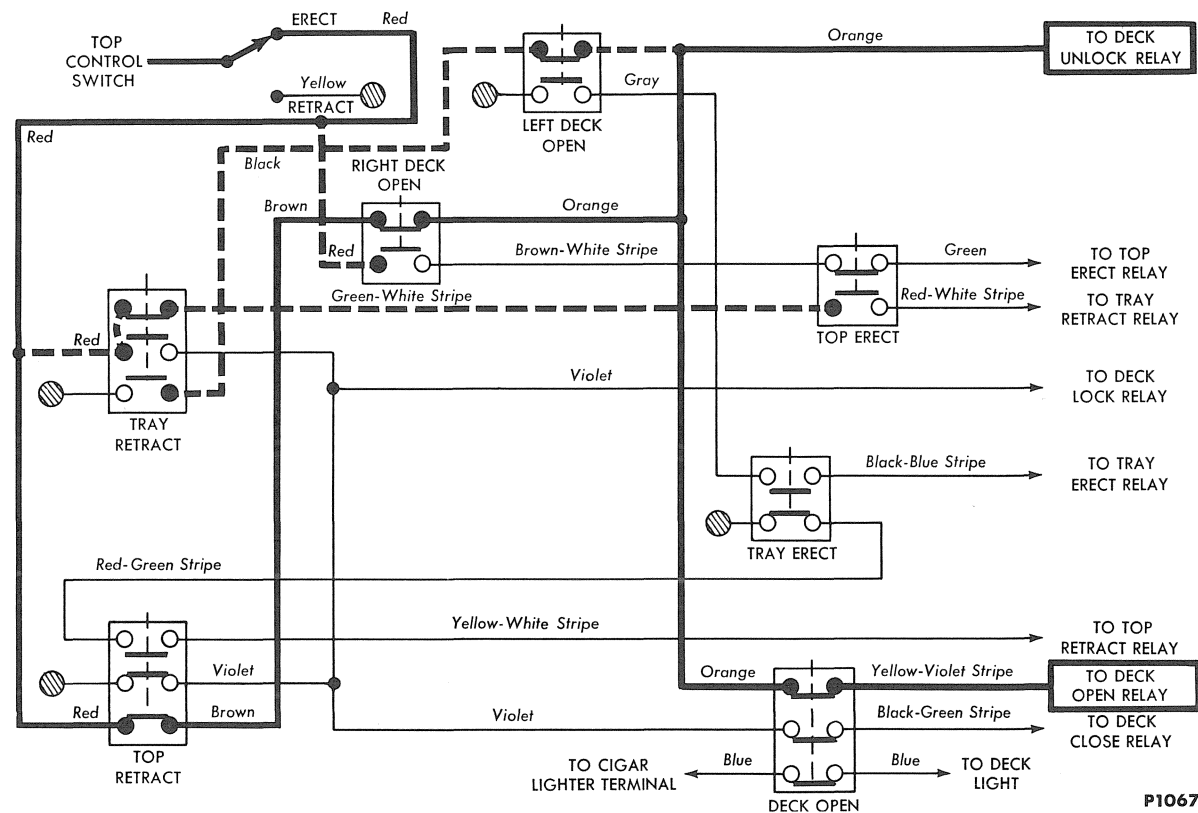
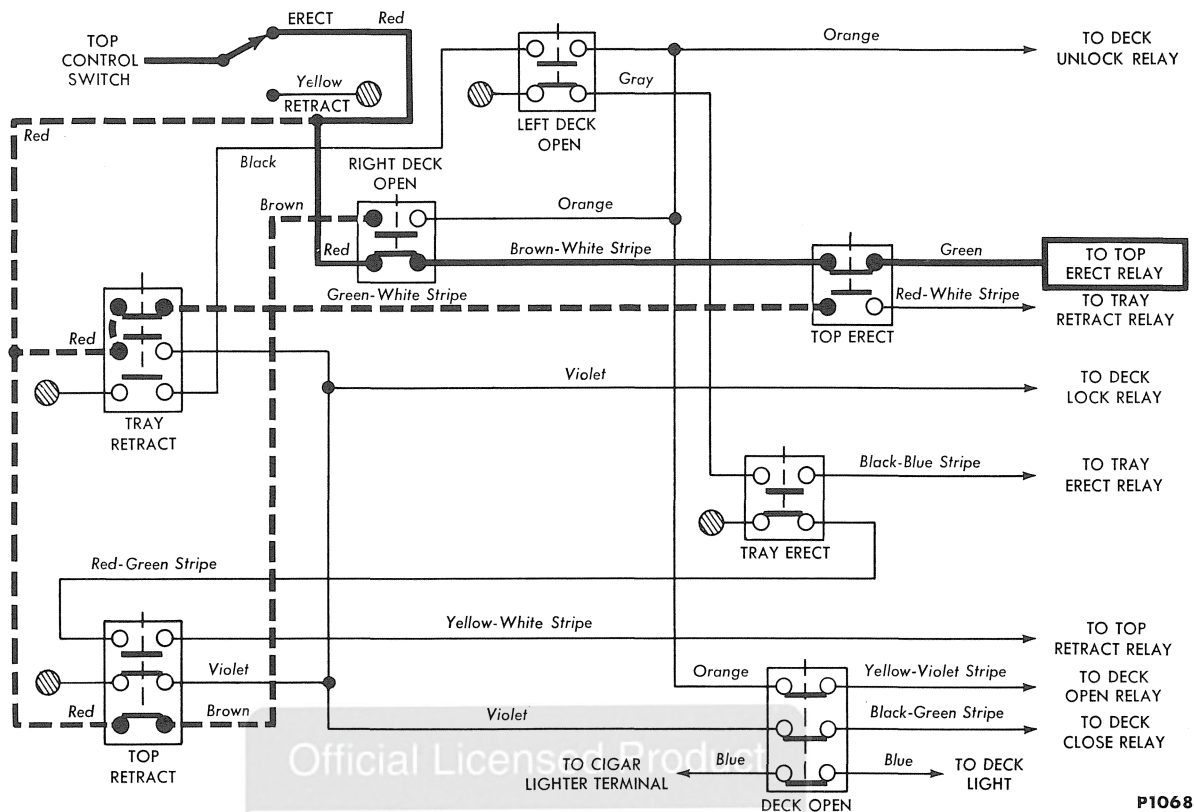
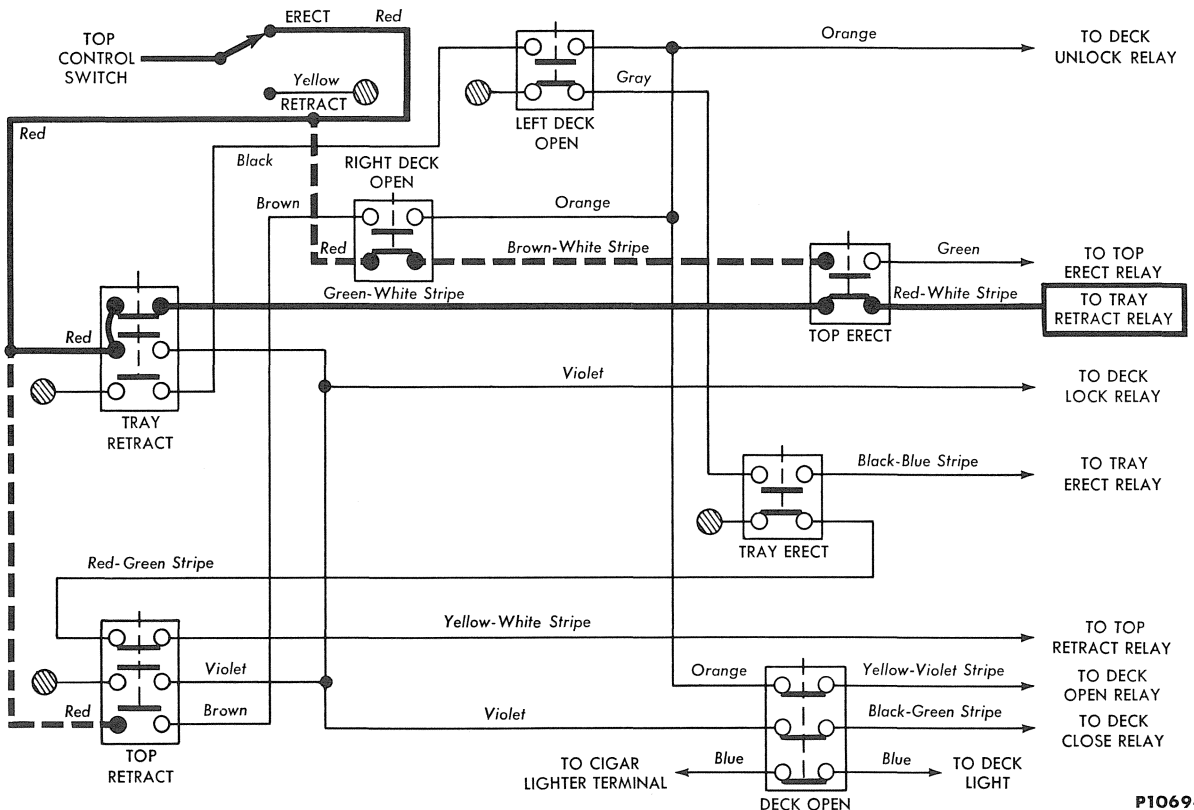


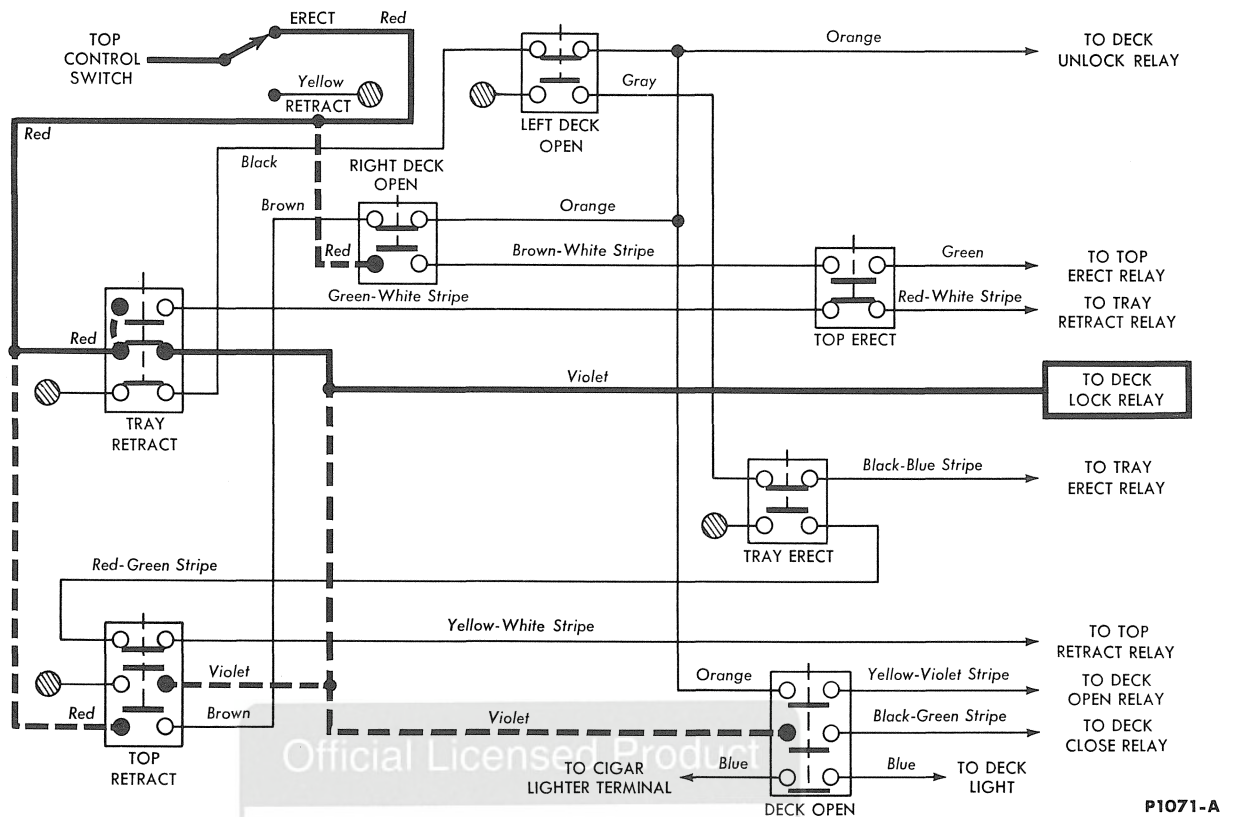
FIG. 3-13—Deck Lid Open—Top Erect Cycle



P1068-A

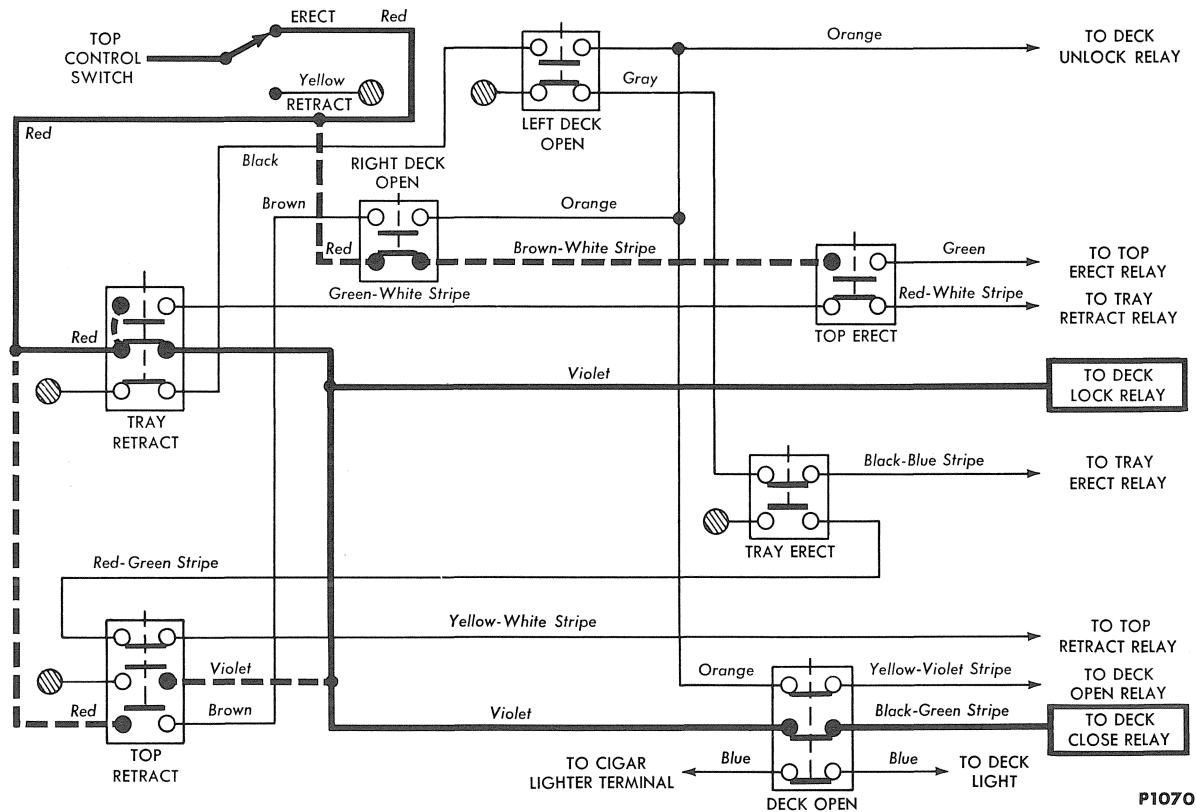


P1069-A



P1071-A

FIG. 3-16—Deck Lid Close—Top Erect Cycle



P1070-A

FIG. 3-17—Deck Lid Lock—Top Erect Cycle

erect limit switch to the top erect power relay, actuating the electric-hydraulic pump and top solenoid valves.

Hydraulic pressure is delivered to the top solenoid valves and then to the 2 top cylinders, raising the top. When the top reaches the fully erected position, it opens the top erect limit switch which de-energizes the top erect relay and stops the electric-hydraulic pump.

PACKAGE TRAY FOLD

When the top erect limit switch opens, another set of contacts in the same switch close (Fig. 3-15). Cur-

rent then flows through the tray retract limit switch to the top erect limit switch and then to the tray retract power relay which actuates the tray motor. This motor folds the tray under the deck lid. When the tray is completely folded, the tray retract limit switch opens, and thus stops the tray motor.

DECK LID CLOSE AND LOCK

As the tray retract limit switch opens, another set of contacts in the same switch close (Fig. 3-16), allowing current to flow to the deck lock relay and through the deck lock limit

switch to the deck close power relay. The electric-hydraulic pump and the deck solenoid valve are actuated. Hydraulic pressure is delivered to the 2 deck cylinders, lowering the deck lid.

The deck lock motor locks the deck. As the deck lock screws draw the deck lid down, the deck lock limit switch is opened (Fig. 3-17), stopping the electric-hydraulic pump. Releasing the top control switch opens the circuit to the deck lock relay.

Fasten the rear window and lock the windshield header clamps.

2 DECK MANUAL OPENING PROCEDURES

If a part of the electrical, mechanical, or hydraulic system of the deck does not work, the following manual procedures may be used to get at the malfunctioning part.

MANUAL OPENING PROCEDURES

UNLOCKING DECK LID USING JUMPER WIRE

When the deck lid will not open

through the use of top control switch, an alternate electrical method can be used to open the deck lid.

1. Remove the rear seat and back cushion to gain access to the deck unlock and open relays.
2. Remove the multiple plug from the deck unlock relay (Fig. 3-18).
3. Fabricate a jumper wire as shown in Figure 3-18. Energize the

deck unlock motor through the disconnected multiple plug and the relay panel bus bar with the jumper wire (Fig. 3-18).

4. If the deck lid will not unlock, there is either an open wire to the motor or a failed motor. The deck will have to be mechanically unlocked.

5. If the deck lid will not open after being unlocked, remove the multiple plug from the deck open relay located behind the rear seat-back. Energize the deck motor and pump assembly through the deck open relay plug with the use of the jumper wire (Fig. 3-18).

6. If the deck will not open, there is an open wire or a failed motor. If the motor operates but is under a heavy load, the solenoid could not be opening. It will be necessary to mechanically open the deck lid.

UNLOCKING DECK LID MECHANICALLY

1. Raise the car approximately 10 inches by placing a floor jack under the underbody rear cross member.

2. From the underside of each wheelbase, remove each deck lid lock retaining screw (Fig 3-19).

3. After lifting the front edge of the deck lid about one inch, operate the top control switch to complete the opening of the deck lid.

OPENING DECK LID MANUALLY

1. Unlock the deck lid by operating the top control switch or by using the preceding method for manually unlocking the deck lid.

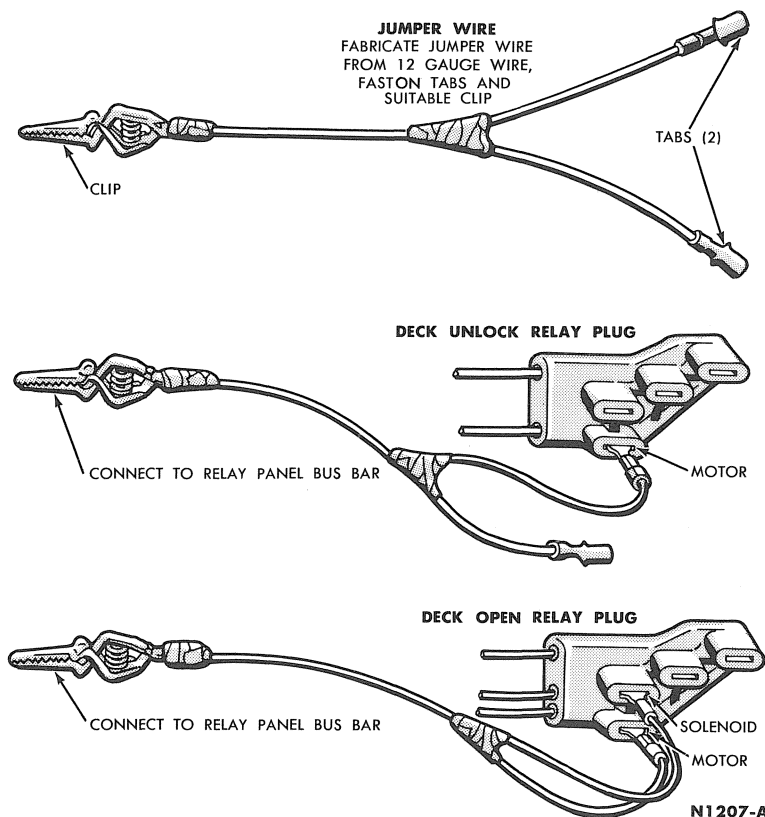


Fig. 3-18—Alternate Electrical Method of Opening Deck Lid

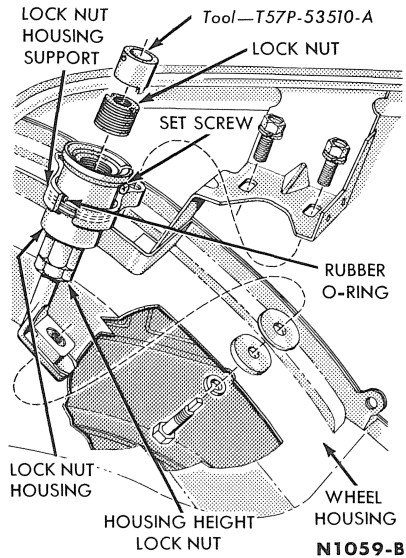


FIG. 3-19—Deck Lid Lock

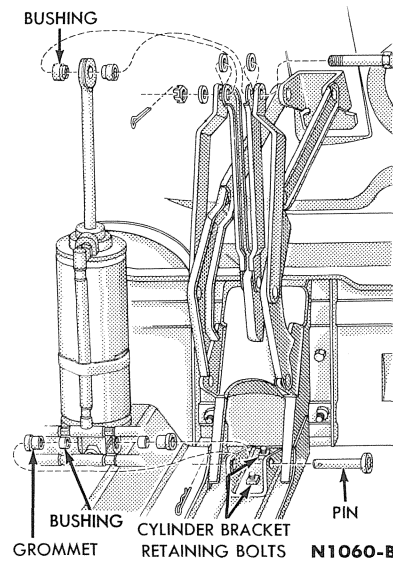


FIG. 3-20—Deck Lift Cylinder

2. From underneath the lower back panel, remove the deck cylinder bracket retaining bolts from each cylinder (Fig. 3-20).

3. Complete the opening of the deck lid manually. If the deck lid locks have been released from the wheel housings, the nut and housing portion of the locks will remain attached to the deck lid.

ERECTING TOP MANUALLY

If it becomes necessary to erect the top manually, proceed as follows:

1. Unlock and open the deck lid.

2. Energize both top solenoid valves, using suitable jumper wires and a 12-volt source. If either valve is inoperative, disconnect the hydraulic line(s) connected to the valve(s) so that there will be no hydraulic block in the top cylinders.

3. Manually erect the top.

3 ELECTRICAL CHECKS

Before attempting any trouble checks, read Section 1, "Top Operation." The following overall observations and checking procedures will assist in isolating the malfunctioning part.

SUPPLY CIRCUIT

A continuity light attached between ground and various points in the supply circuit will identify an inoperative or defective component (Fig. 3-5). With the ignition switch in the ON or ACC position and the transmission selector in N or P, checks at the circuit breakers, neutral switch relay, actuator switch and relay power bus bar (in that order) will isolate the problem. Fig. 3-21 will assist in identifying the neutral switch relay terminals.

SWITCH CIRCUITS

The switch circuits can be checked by by-passing the various components with a jumper wire. A continuity light cannot be used as the current draw required by the light will not allow the relay coils to energize. Figs. 3-3 through 3-17 should be referred to for identification of the wires. Fig. 3-21 will identify the control relay terminals.

Connecting the jumper wire between the relay bus bar and the relay coil terminal will by-pass the switch circuit. If the motor or solenoid

operates, the switch circuit can be checked to locate the inoperative or maladjusted switch, loose wire connector, or defective switch circuit wire. An audible "click" of the relay is another indication of switch circuit problems. If the component fails to operate and the relay is functional

(the relay "clicks"), the motor or solenoid circuits are at fault. Moving a jumper wire to the relay motor terminal will determine if the relay is at fault. Should the motor or solenoid still fail to function, the motor or solenoid should be checked.

When the deck lid is opened, all

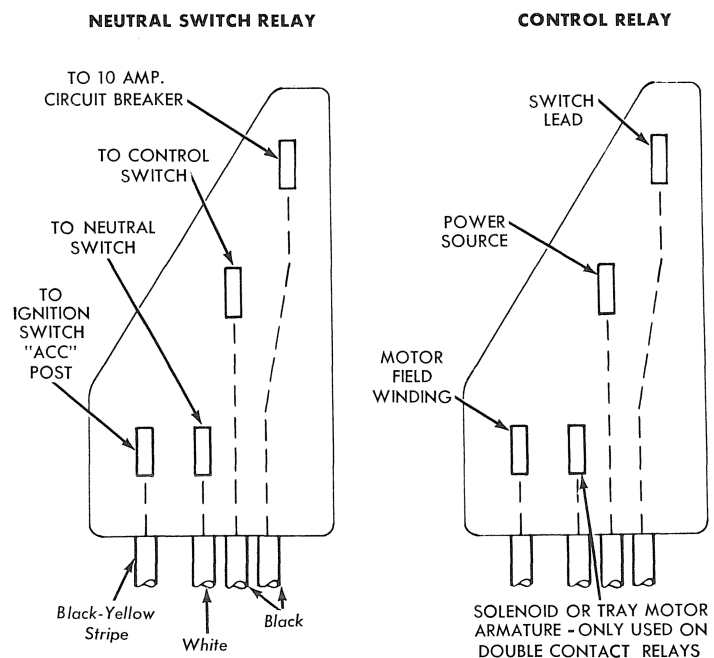


FIG. 3-21—Relay Wire Connector Identification

N1176-A

switches are accessible for a direct check of their function. A malfunction of the top can be caused by a defective or improperly adjusted switch. A check for this condition should be made before making further tests. A switch can be checked by depressing the switch stem, if improperly adjusted, or by-passing the switch with a jumper wire directly at the switch contact terminals or wire connectors.

MOTOR OR SOLENOID CIRCUITS

Application of a 12-volt power

source with a jumper wire directly to the motor or solenoid, or by-passing the motor ground circuit breaker, will isolate the cause of malfunction.

SWITCH ADJUSTMENT OR FUNCTION CHECKS

An ammeter (100-Amp. scale) inserted in the motor feed circuit will aid in determining which of the electrical components is operating (both normally and abnormally). The ammeter should be connected between the main feed 50-amp. circuit breaker on the starter relay and the motor

supply lead (#8 gauge black wire) which supplies the control relay bus bars.

Should a switch be improperly adjusted and close the relay circuit for any functional cycle and yet not open the cycle just finishing, the ammeter reading will indicate the problem. Use Figs. 3-3 through 3-17 and the Electrical Component Current Draw Table, shown in Section 7—Specifications, as a guide to the various components in use at each step of the top operation. The ammeter reading can be directly converted to a diagnosis of the problem.

4 MECHANICAL AND HYDRAULIC CHECKS

MECHANICAL CHECKS

Improper top operation can be caused by bent or misaligned linkage, binding linkage pins, and/or broken pivot bushings. Should the electrical and hydraulic systems be functionally correct and unsatisfactory operation of the top persists, check and adjust or replace the mechanical components as required.

HYDRAULIC CHECKS

Faulty hydraulic system operation can be caused by lack of fluid, leaks, air in the system, obstruction or kinks

in the hoses, or faulty operation of a cylinder or the pump.

FLUID LEVEL CHECK

1. Erect the top.
2. Place absorbent cloths below the filler plug.
3. Remove the filler plug, and check the fluid level. It should be level with the bottom edge of the hole.
4. If the level is low, check the system for leaks, adding shock absorber or Type "A" automatic transmission fluid as necessary.

LIFT CYLINDER OPERATION CHECK

Operate the top control switch and observe the operation of the lift cylinders for the following:

If the movement of the piston rods is sluggish or uneven, check the hoses from the pump to the cylinders for kinks.

If one piston rod moves more slowly than the other, the cylinder with the slower rod is defective and should be replaced.

If both rods move slowly, or do not move at all, disassemble and repair the pump.

5 TROUBLE DIAGNOSIS GUIDE

The following trouble diagnosis guides, when used in conjunction with the checking procedures detailed in Sections 3 and 4, will assist in determining the possible cause of any malfunction of the top mechanism. The possible causes are listed in the

order of their ease of checking to avoid unnecessary disassembly. The troubles listed for each subsequent part of the cycle are limited to those things which could occur only if the mechanism reaches the subject part of the cycle in a normal manner.

A battery which is not in a normal fully charged condition can affect top operation. Be sure of an adequate power supply before making extensive tests of the top circuits.

TROUBLE DIAGNOSIS GUIDE

DECK UNLOCK	NO UNLOCKING ACTION, NO NOISE While holding the top control switch in the retract position, move the transmission control lever back and forth through the N position. If no audible click is heard from the neutral switch relay, the main 50-ampere circuit breaker, the switch 10-ampere circuit breaker, the neutral switch and the switch relay should be checked as detailed in	Section 3. If the deck lock mechanism begins to function normally, the neutral switch should be checked. An audible noise from the neutral switch relay without any action from the deck lock mechanism indicates that the neutral switch is functional. NO UNLOCKING ACTION, NO NOISE—NEUTRAL SWITCH FUNCTIONAL With the neutral switch relay op-
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TROUBLE DIAGNOSIS GUIDE (Continued)

DECK UNLOCK (Continued)	erating, move the top control switch to the opposite position to determine if the deck locks will ratchet. If deck locking occurs, check the following components by by-passing them with a jumper wire. A. Retract Cycle. Check the top control switch, tray retract limit switch, right deck open limit switch, and the deck unlock relay. B. Erect Cycle. Check the top control switch, top retract limit switch, left deck open limit switch, and the deck unlock relay. NO UNLOCKING ACTION, CONTROL RELAY CLICKS If a control relay functions, as determined by an audible click, the trouble may be in the tray retract limit switch, the deck lock motor, or motor ground circuit breaker. It will be necessary to manually unlock the deck lid, as detailed in Section 2, to gain access to the components.	NO UNLOCKING ACTION, LOCK MOTOR RUNNING When the lock motor operates and does not unlock the deck lid, the cause may be broken flexible drive cables or loose lock nuts. Only one side may be inoperative. NO UNLOCKING ACTION, DECK LID JUMPS OFF LOCKS A maladjusted deck lock limit switch will allow the hydraulic pump to apply pressure to the lift cylinders and cause a bind in the lock screw operation. Adjustment of the switch should correct the trouble. DECK UNLOCKS, TOP MOVES—RETRACT CYCLE Any movement of the top during deck unlocking indicates a malfunction of the tray erect limit switch. DECK UNLOCKS, TRAY BEGINS TO FOLD—ERECT CYCLE Any folding action of the tray during deck unlocking indicates a malfunction of the top erect limit switch.
DECK LOCK	SLOW LOCKING ACTION A slow, binding action of the lock screws indicates that the deck lid lift pump is operating. Move the top control switch to open the deck lid	and observe the movement of the deck lid as it unlocks. Should the deck lid pop off the lock nuts, the deck lock limit switch adjustment should be checked.
DECK OPEN	DECK UNLOCKS, BUT WILL NOT OPEN—DECK LIGHT OFF The deck light contacts of the deck lock limit switch will be closed at the same time as the contacts which control the deck open relay. Lifting up on the deck lid at the deck lock limit switch should allow the switch to move and open the deck lid. If the deck lid does not start to open, the switch may be at fault and by-passing the switch at the deck open relay will verify this condition. DECK UNLOCKS, BUT WILL NOT OPEN—DECK LIGHT ON If the deck light is on, the deck lock limit switch should be making contact to close the deck open relay circuit. By-passing the switch at the	relay will check the switch. Should the deck still be inoperative, by-pass the relay to check its performance. It will be necessary to manually open the deck lid, as detailed in Section 2, to test the motor and deck solenoid. DECK OPENS, ACTION NOT SMOOTH A jumpy or slow deck lid motion indicates trouble in the hydraulic system. Check the fluid level in the pump assembly. A low fluid level is an indication of possible leaks which should be corrected before replacing the fluid. Troubles in the deck lift cylinders will also be indicated by a jumpy motion of the deck lid.

TROUBLE DIAGNOSIS GUIDE (Continued)

DECK CLOSE	DECK WILL NOT CLOSE—LOCK SCREWS NOT RUNNING Check the limit switch adjustment (top retract limit switch or retract cycle or tray retract limit switch on erect cycle) by depressing the switch by hand. If adjustment does not correct the trouble, check the switch contacts with a jumper wire.	DECK WILL NOT CLOSE—LOCK SCREWS RUNNING Check the deck close relay and the deck lock limit switch for malfunction with a jumper wire. DECK CLOSES—LOCK SCREWS NOT RUNNING Check the deck lock relay, deck lock motor, and lock motor circuit breaker.
TRAY ERECT	TRAY WILL NOT ERECT—DECK LOCK SCREWS RUNNING If the deck lift mechanism does not depress the right deck open limit switch, the deck lock screws and pump motor will still operate. If the correct action can be initiated by depressing the right deck open limit switch plunger, adjust the switch. TRAY WILL NOT ERECT—DECK LOCK SCREWS STOPPED If all action stops when the deck lid reaches the completely open position, the trouble may be in the right deck open limit switch, tray erect	limit switch, tray motor, or the tray motor ground circuit breaker. The switches can be by-passed by touching the proper terminals with a jumper wire (see the individual circuit diagrams in Section 1). Further testing of the tray erect relay, tray motor and motor ground circuit breaker can then be performed. TRAY ERECTS—DECK LOCK SCREWS CONTINUE RUNNING Adjust the right deck open limit switch to properly open the deck open relay terminals of the switch and stop the deck screws and pump motor.
TRAY RETRACT	TRAY WILL NOT RETRACT Check the adjustment of the top erect limit switch by depressing the switch plunger by hand. If the tray still does not move, check the top erect limit switch, tray retract limit switch, tray motor, and motor ground circuit breaker.	TRAY STOPS DURING RETRACTION An incorrectly adjusted top erect limit switch will allow the hydraulic-pump and solenoids to be energized during tray movements. This condition will overload the total circuit and open the main 50-ampere circuit breaker.
TOP MOVEMENT	TOP WILL NOT RETRACT Pump Motor Not Running. When the top will not retract after the tray has extended, check the tray erect limit switch, top retract limit switch, top retract relay, and the pump motor. The tray erect limit switch may be maladjusted, and depressing the switch plunger should start the normal top operation. The tray motor, if stalled at the limit of tray travel,	may have opened the main 50-ampere circuit breaker. Further check of the tray erect limit switch and the top retract limit switch can be made at the switch terminals or connectors. The top retract relay can be checked by by-passing it with a jumper wire. Pump Motor Running. A running pump motor indicates that the switch and relay circuits are functional. A

TROUBLE DIAGNOSIS GUIDE (Continued)**TOP MOVEMENT (Continued)**

check of the top solenoids should be made. Connecting the solenoid, feed wire momentarily should produce an audible noise as the valve opens and closes.

TOP STOPS DURING RETRACTING

A stalled tray motor can open the motor supply 50 - ampere circuit breaker and stop the top movement. Check the tray erect limit switch to make certain that the tray motor stops at the end of the tray travel.

TOP WILL NOT ERECT

Pump Motor Not Running. Check the left deck open limit switch, top erect limit switch, top erect relay, and the pump motor. The left deck

open limit switch may be maladjusted and depressing the switch plunger by hand should start the normal top operation. The checking of the other components can be made by bypassing each one with a jumper wire.

Pump Motor Running. Check the top solenoid valves to determine if the valves are opening as required. Connecting the solenoid feed wire momentarily should produce an audible noise as the valve opens and closes.

TOP MOVEMENT NOT SMOOTH

If the top movement is not smooth, check the solenoid valves and top lift cylinders for malfunction. Also check for mechanical problems as detailed in Section 4.

6 ADJUSTMENTS

If the top is misaligned, corrections should not be made until after a check has been made for bent linkage.

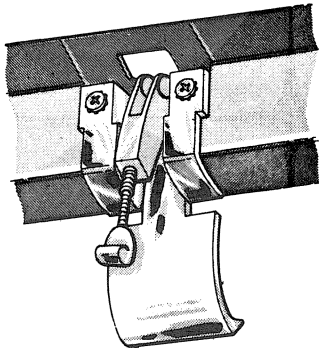


FIG. 3-22—Toggle Clamp

Before aligning the top, visually determine if the trouble results from top misalignment and/or window misalignment. It may be necessary to align both the top and the windows because of the relationship between the two. **ADJUSTMENTS OF THE DOOR AND QUARTER WINDOWS MUST BE CHECKED AND ANY NECESSARY CHANGES MADE BEFORE MAKING TOP ADJUSTMENTS. THESE WINDOWS MUST BE FULLY CLOSED TO INSURE PROPER ADJUSTMENT.**

There are 3 main adjustment areas for the top and the luggage compartment door: the rear rail area, the main pivot bracket area, and the luggage compartment door area.

DOWEL ADJUSTMENT

The header bow dowels must be aligned with their striker plates in the header bow. After making any top adjustment, check the dowel alignment, and adjust if necessary. After removing the header bow weatherstrip, the dowels can be moved laterally by merely loosening the screws.

TOGGLE CLAMP ADJUSTMENT

The toggle clamps that hold the header bow against the header can be adjusted to provide a good seal.

1. To determine which side is not sealing, check the weatherstrip between the header bow and the header. Both toggle clamps need not be adjusted unless necessary. (Fig. 3-22)

2. Release the toggle clamps, and thread the toggle hook in or out until adequate sealing pressure is applied at the header weatherstrip.

REAR RAIL AREA ADJUSTMENTS SIDE RAIL SAG

If the side rail sags above the door glass, adjust as follows, using the top of the door glass and the bottom of the side rail as points for measurement.

1. Release the toggle clamps.
2. Adjust each front intermediate

side rail set screw flush with the end of the rail (Fig. 3-23).

3. Loosen the balance link adjustment bolts (Fig. 3-23) at each side of the car.

4. Lengthen or shorten the balance link (Fig. 3-23) to obtain a parallel condition between the front side rail, the front intermediate side rail, and the top of the door window frame.

5. Tighten the balance link adjustment bolts. **To eliminate a crowning condition, adjust the front intermediate side rail set screw (Fig. 3-23).**

TOP STACK ADJUSTMENT

1. Stack the top.

2. If the top stack needs vertical adjustment for clearance, loosen the balance link adjustment bolts shown in Fig. 3-23.

3. Move the balance link to get suitable stack height, and tighten the bolts.

4. Raise the top slowly, checking for fore-and-aft clearance at the rear of the linkage, and fasten the clamps.

5. Check, and if necessary, adjust side rail sag.

QUARTER WINDOW CLEARANCE

Loosen the bolts marked "A" in Fig. 3-24, and adjust the serrations to get a snug fit between the rear quarter window and the intermediate side rail. After making this adjustment, check the top sag and the top stack adjustments.

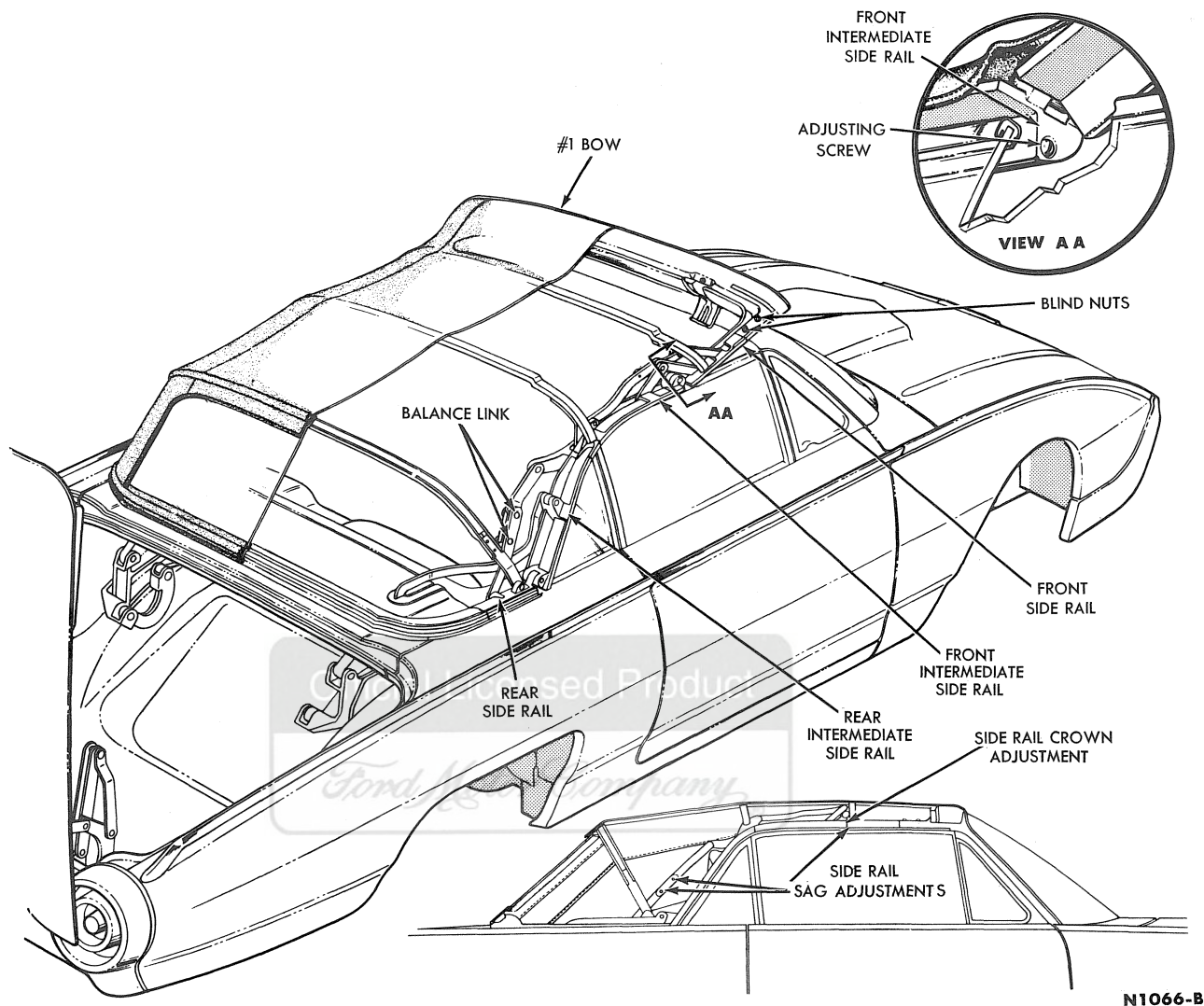


FIG. 3-23—Top Linkage

MAIN PIVOT BRACKET AREA ADJUSTMENTS

The main pivot bracket and its support provide for shifting the entire top assembly fore and aft, vertically and laterally. **Because movement of the main pivot bracket will disturb several other adjustments, move this bracket only after other adjustments have failed to solve a specific problem.**

FORE-AND-AFT ADJUSTMENT

This adjustment moves the top forward or rearward for a fit between the rear edge of the package tray and the body opening. This adjustment may also be necessary for proper mating of the header dowels and their strikers.

1. Loosen the main pivot support bracket retaining bolts (Fig. 3-24).

2. Move the top fore or aft to get a fit between the body and the rear edge of the package tray or to mate the header dowels and their strikers.

3. Tighten the bolts, and check other adjustments.

VERTICAL ADJUSTMENT

This adjustment moves the top for a fit between the rear edge of the package tray and the body opening.

1. Loosen the main pivot support bracket retaining bolts (Fig. 3-24).

2. Move the top up or down until the rear edge of the package tray is level with the body opening. There must be clearance for window movement.

3. Tighten the bolts, and check other adjustments.

LATERAL ADJUSTMENT

To obtain a centered fit between

the side rail weatherstrips and the top edges of the door glasses and the quarter windows, the top may be moved sideways as follows:

1. At both main pivot brackets loosen the adjustment bolts retaining the main pivot support bracket to the floor pan (Fig. 3-24).

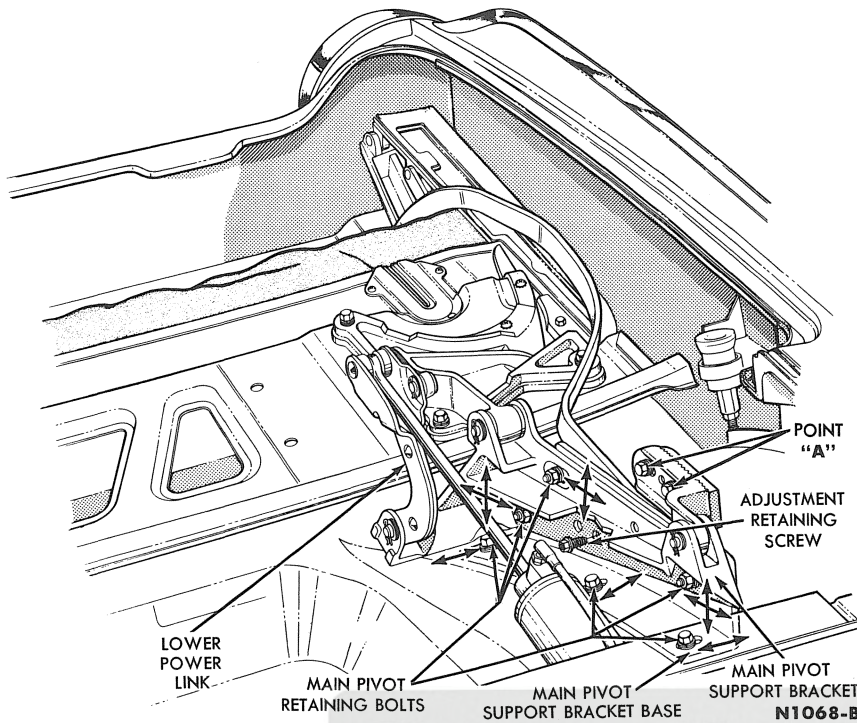
2. Move the top to either side to get a centered fit at the side rail weatherstrips.

3. Tighten the bolts, and check other adjustments.

The side rail weatherstrip can also be adjusted after loosening the weatherstrip retaining nuts.

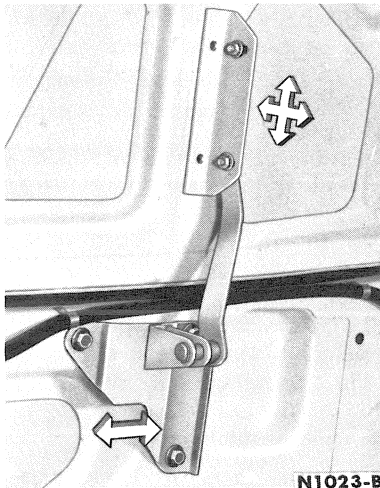
DECK LID AREA ADJUSTMENTS**FORE-AND-AFT ADJUSTMENT OF THE FINISH PANEL**

Adjust the space between the

**FIG. 3-24—Main Pivot Support Bracket**

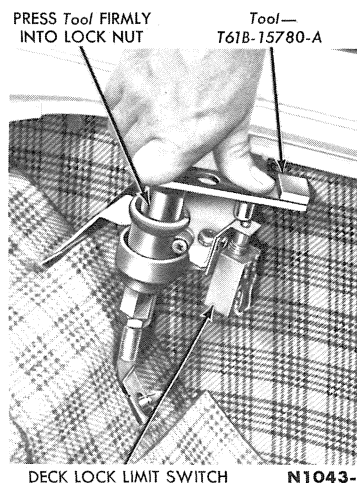
edges of the finish panel and the deck lid and/or the body as follows:

1. Slightly loosen the screws that attach the finish panel hinge to the deck lid (Fig. 3-25).
2. Shift the finish panel so that there is equal space between the edges of the finish panel and the deck lid.
3. Tighten the retaining screws securely.

**FIG. 3-25—Deck Lid Finish Panel Adjustments**

UP-AND-DOWN ADJUSTMENT OF THE FINISH PANEL

1. Slightly loosen the hinge arm retaining bolts at the finish panel (Fig. 3-25).
2. Raise or lower the finish panel until the finish panel is flush with the surface of the deck lid. Make certain that the weatherstrip seal is not disturbed.

**FIG. 3-26—Deck Lock Switch Adjustment**

3. Tighten the retaining bolts securely.

LATERAL OR FORE-AND-AFT DECK LID ADJUSTMENT

1. Slightly loosen the hinge support bracket retaining bolts at the lower back panel.
2. Shift the deck lid either laterally, fore, or aft, in the enlarged holes, until there is equal clearance along the sides and rear edges of the deck lid.
3. Tighten the hinge support bracket retaining bolts securely.

SWITCH ADJUSTMENTS

The locations of the various limit switches are shown in Fig. 3-2.

TOP RETRACT LIMIT SWITCH

1. Adjust the top retract limit switch to the midpoint of the adjustment slots.
2. Lower the top to the full down position.
3. Readjust the top retract limit switch as necessary. A slight adjustment of the switch will either delay or advance the deck lid close operation.

DECK LOCK SWITCH ADJUSTMENT

1. Use tool T61B-15780-A (Fig. 3-26).
2. Pull apart the switch quick-disconnect and attach a continuity test light to the wires that go to the bottom set of contact terminals.
3. Press the tool firmly into the lock nut. Adjust the switch upward until the test light attached to the bottom set of contacts just goes on. Tighten the switch mounting screws and remove the tool.

DECK LOCK SWITCH ACTUATOR ADJUSTMENT

1. Use tool T61B-15780-A (Fig. 3-27).
2. Position the tool over the lock screw (Fig. 3-27). Press the tool firmly against the lock screw shoulder.
3. Pivot the tool to line up with the switch actuator. Bend the actuator until it just touches the raised portion of the tool.
4. If the operation of the deck lid discloses that the deck lid pops up when opening, the switch actuator may be bent very slightly away from the deck lid.

TOP ERECT LIMIT SWITCH

1. Raise the top to the full up position.

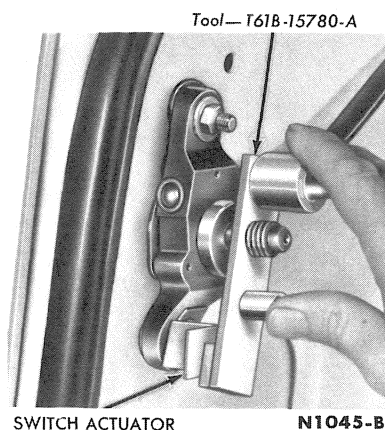


FIG. 3-27—Deck Lock Actuator Adjustment

2. Place an 0.060 inch shim between the end of the switch shaft and the actuator.

3. Adjust the switch actuator until the switch is firmly to the end of its travel against the shim. Tighten the switch actuator mounting screws, and remove the shim.

TRAY ERECT LIMIT SWITCH

1. Extend the package tray on the deck lid to the end of its travel.

2. Place an 0.060 inch shim between the end of the switch shaft and the switch actuator on the tray support arm.

3. Adjust the switch actuator until the switch is firmly to the end of its travel against the shim. Tighten the switch actuator mounting screws, and remove the shim.

TRAY RETRACT LIMIT SWITCH

1. Retract the package tray on the deck lid to the end of its design travel.

2. Place an 0.060 inch shim between the end of the switch shaft and the switch actuator on the tray support arm.

3. Adjust the switch actuator until the switch is firmly to the end of its travel against the shim. Tighten the switch actuator mounting screws, and remove the shim.

DECK OPEN LIMIT SWITCHES

Both right and left deck open switches are adjusted as follows:

1. Raise the deck lid to the full open position.

2. Place a 0.060 inch shim between the end of the switch shaft and the actuator.

3. Adjust the actuator so that the switch shaft is fully depressed. Tighten the actuator mounting screws and remove the shim.

DECK LOCK ADJUSTMENT

For an adequate seal, the deck lock screw assembly must be adjusted to engage properly with the lock nut assembly.

DECK LOCK SCREW ASSEMBLY

Loosen the 2 nuts retaining the lock screw assembly to the deck lid and adjust the assembly fore or aft to align with the lock nut assembly.

DECK LOCK NUT HOUSING SUPPORT

Loosen the 2 screws retaining the lock nut housing support to the quarter panel and adjust the support side to side to align with the lock screw (Fig. 3-19).

DECK LOCK NUT SET SCREW

Loosen the set screw retaining the lock nut in the housing assembly and turn the lock nut in or out to the required position. Turn the lock nut, using tool T57P-53510-A (Fig. 3-19), so that the lock screw will ratchet and the deck lid weatherstrip is compressed.

Do not attempt any trial locking of the deck unless the set screw is properly tightened.

DECK LOCK NUT HOUSING HEIGHT

The foot of the lock nut housing assembly may be adjusted up or down from the wheelhouse to insure the correct positioning of the O-ring. The O-ring should be centrally located in the housing support (Fig. 3-19).

7 SPECIFICATIONS

CIRCUIT BREAKER CHART

Circuit	Protective Device	Location
Convertible Top Control		
Relay Feed	50-amp. Circuit Breaker	On Starter Relay
Switch Feed	10-amp. Circuit Breaker	Fuse Panel R. H. Cowl
Package Tray Motor	15-amp. Circuit Breaker	On Deck Lid
Deck Lock Motor	15-amp. Circuit Breaker	On Deck Lid

ELECTRICAL COMPONENT CURRENT DRAW

Component	Amperes*
Pump Motor—Normal	54-60
—By-passing	42-50
Tray Motor—Normal	18-32
—No Load	14-18
—Stalled	45-58
Lock Motor—Normal	16-20
—No Load	12-15
—Stalled	32-40
Solenoids—Each	10

*100-amp. scale ammeter connected between 50-amp. circuit breaker and relay feed wire.

TOP MAXIMUM AMPERAGE DRAW

Operation	Amperes*
Top Retract Cycle	
Deck Lid Unlock	20
Deck Lid Open	63
Package Tray Extend	32
Top Retract	65
Deck Lid Close	60
Deck Lid Lock	22
Top Erect Cycle	
Deck Lid Unlock	20
Deck Lid Open	63
Top Erect	65
Package Tray Fold	20
Deck Lid Close	60
Deck Lid Lock	22

*While making amperage draw tests, a battery reading of 11.5-12.5 volts must be maintained. Momentary peak currents above specifications are not significant.

PART 4

GALAXIE • FALCON MONTEREY • COMET

The retractable top is operated by an electric-hydraulic system which automatically raises the top or lowers it into a top-well behind the rear seat.

1 CONVERTIBLE TOP ELECTRICAL SYSTEM

The convertible top electrical system includes an electric motor, a control switch, a circuit breaker, and the necessary wiring (Fig. 4-2).

A 12-volt motor is used to drive the hydraulic pump. The motor is reversible so that the pump can be driven in either a clockwise or a counterclockwise direction. The motor and pump assembly is mounted on the floor behind the rear seat back.

The top control switch is mounted in the instrument panel. A toggle switch is used in the Ford Galaxie or Falcon, whereas the Monterey or Comet utilizes a push-pull type switch.

The electrical circuit is protected by a 30-ampere circuit breaker attached to the starting motor relay in the engine compartment.

2 CONVERTIBLE TOP HYDRAULIC SYSTEM

The convertible top is operated by an electric-hydraulic system which is actuated by a control switch mounted on the instrument panel.

The hydraulic power system consists of an electric motor, pump, and reservoir assembly, two hydraulic lift cylinders, and the necessary hydraulic lines. The motor and pump assembly, the lift cylinders, and the lines are accessible after the rear cushion and seat back and the quarter trim panels have been removed (Fig. 4-3).

The motor drives the hydraulic pump. Hydraulic pressure is created by the rotation of the internal rotor

gears, and is exhausted through one of the two ports in the pump housing.

Since the motor is reversible, either port may be on the vacuum (intake) or pressure side of the pump, depending on the direction of pump rotation. When the pump rotors turn, hydraulic pressure is created through one side of the pump while the other side of the pump becomes the vacuum side. Two ball check valves are located in the valve housing.

The vacuum on the intake side of the pump pulls the ball off its seat and pressure on the exhaust side of the pump holds the ball against its seat. When pump rotation is reversed, the intake and pressure sides and the ball check actions are also reversed.

When the top is being lowered, hydraulic fluid is pumped through the hydraulic lines into the upper ends of the cylinders. The hydraulic fluid exerts a pressure on top of the piston on each of the two cylinders, forcing the pistons downward.

The downward movement of the pistons displaces the fluid contained in the lower portions of the cylinders. The fluid displaced in this manner flows through the return lines attached to the lower ends of the cylinders to the intake side of the pump. The fluid then passes through the internal rotors of the pump and into the pressure side of the pump. When the top is being erected, the flow of fluid is reversed.

3 CONVERTIBLE TOP CHECKS

If the top cannot be lowered or raised satisfactorily, or if it fails to operate at all, and the trouble is not readily apparent, make the following mechanical, electrical, and hydraulic checks to find the cause of the trouble.

Always check the battery before making any of the following checks.

Table 1 shows symptoms and possible causes of trouble.

MECHANICAL CHECKS

1. If the action of the top is slow, raise and lower it while looking for bent or misaligned linkage or a faulty hydraulic system.

2. If binding is noted when clamping the top to the header, check the alignment of the door and the quarter windows with the side rail weatherstrips as shown in Figure 4-4. Also check the top sag adjustment and toggle clamp adjustment.

ELECTRICAL CHECKS

BATTERY CHARGE

The battery charge should be determined before making any electrical checks because a partially discharged battery will cause slow motor and pump operation. Figure 4-5 shows the complete electrical circuit.

CURRENT DRAW

To check the current draw in the top operating circuit, disconnect the

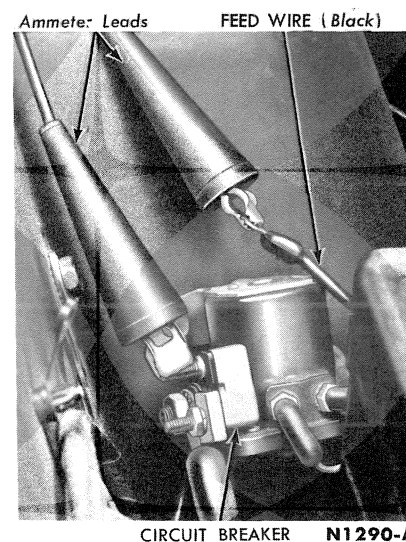
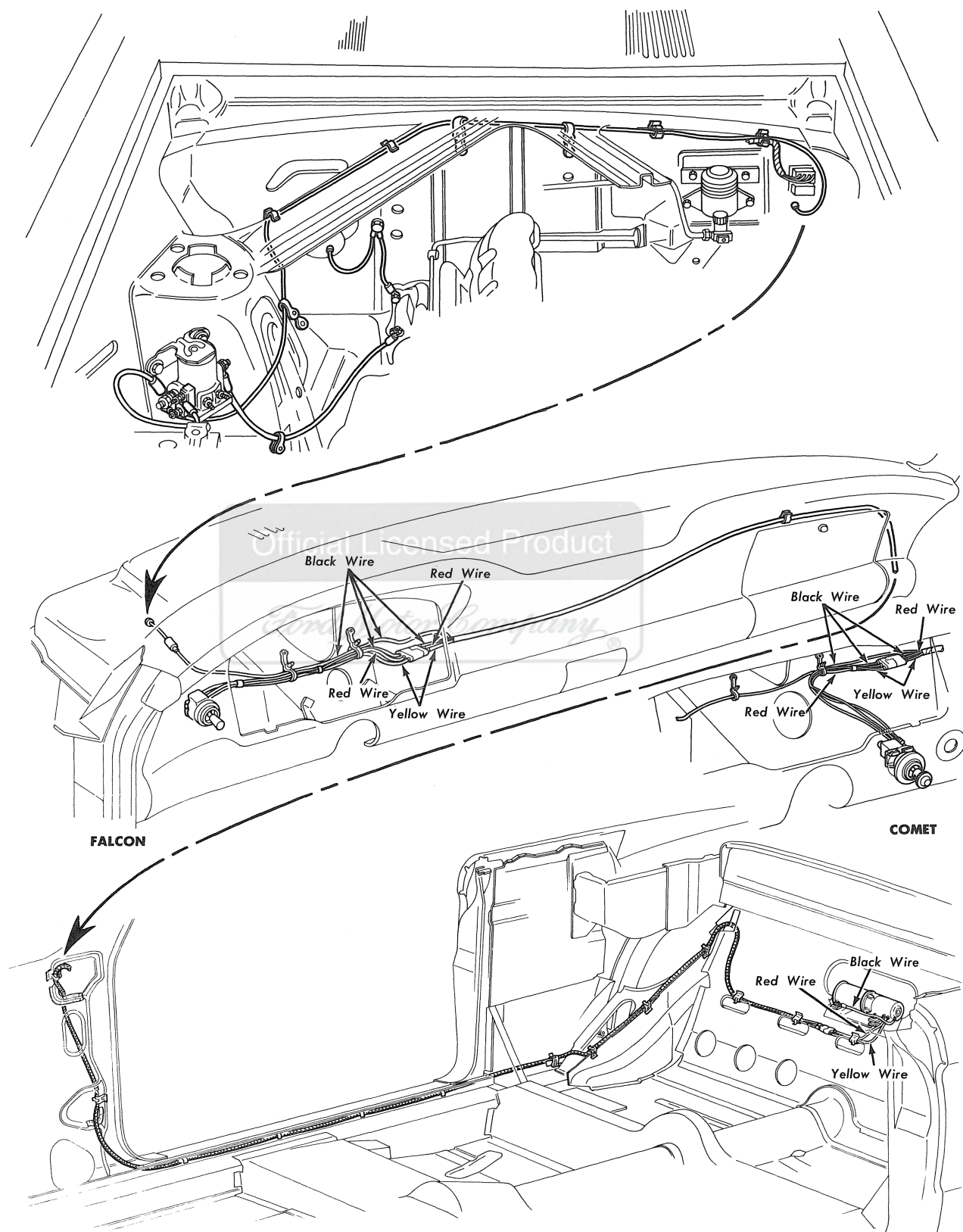
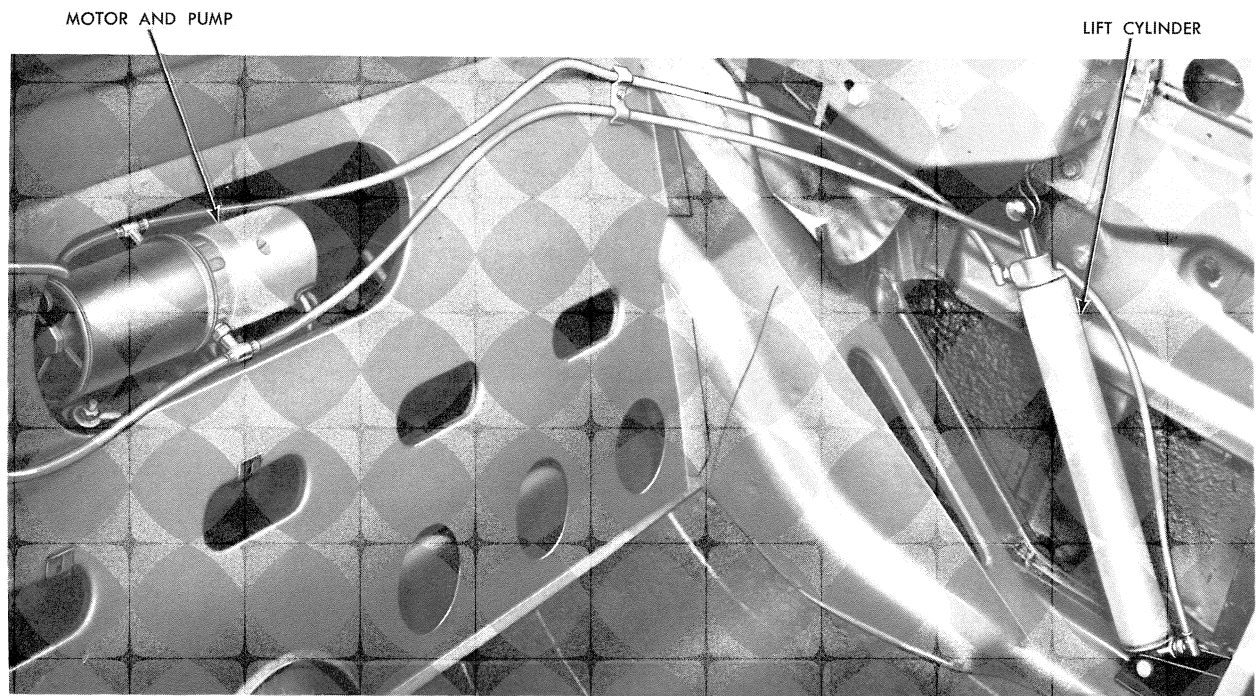


FIG. 4-1—Current Draw Test

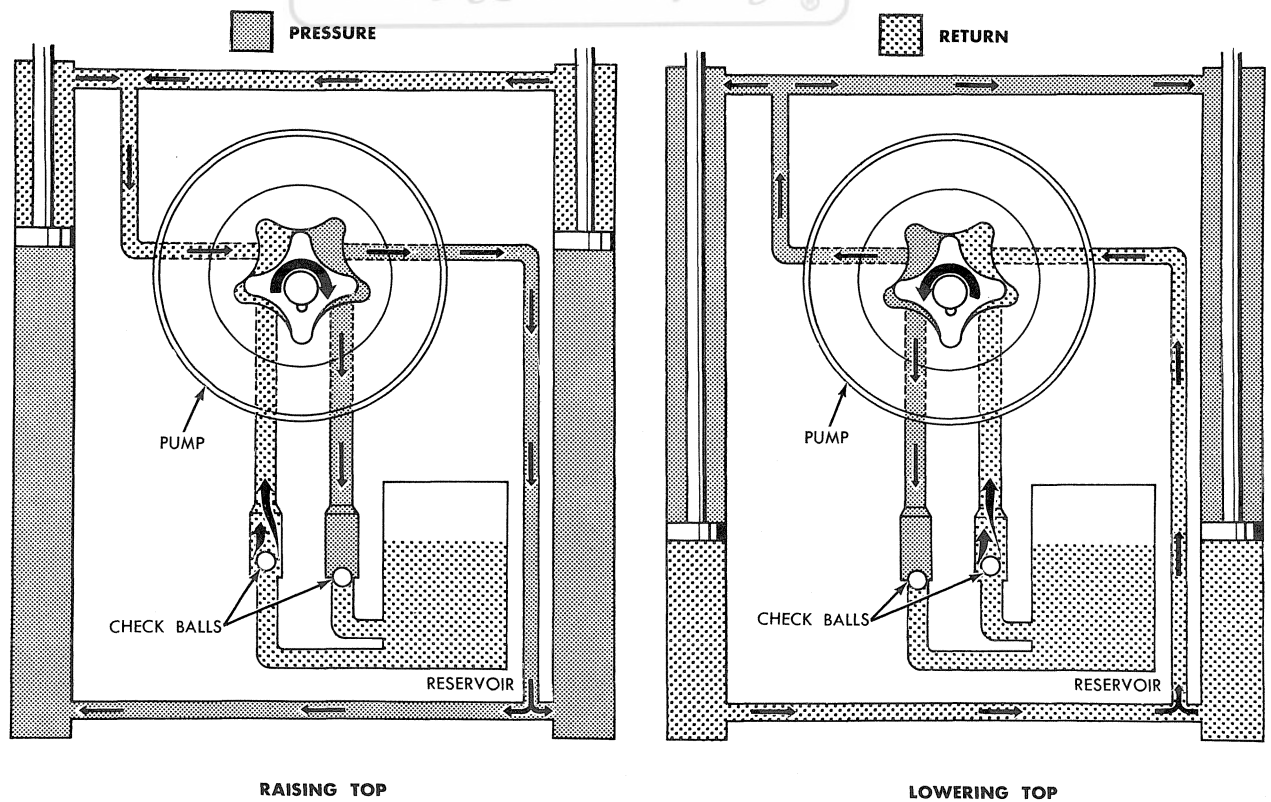


N1284-A

FIG. 4-2—Convertible Top Electrical System

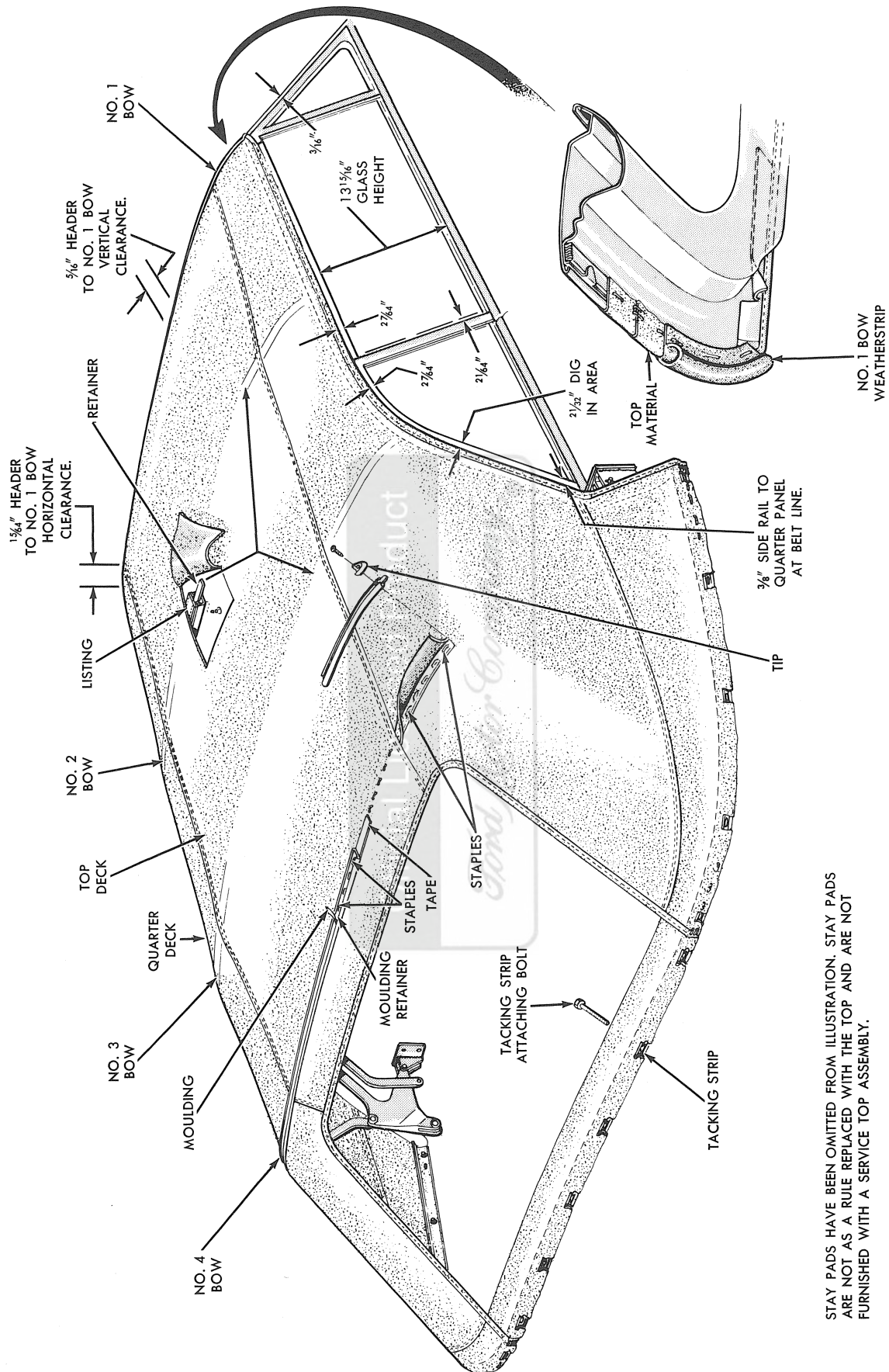


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FIG. 4-3—Convertible Top Hydraulic System



NT255-A

FIG. 4-4—Door and Quarter Window To Side Rail Alignment

TABLE 1—TROUBLE SYMPTOMS AND POSSIBLE CAUSES

SYMPTOMS	POSSIBLE CAUSES																
	TOP CONTROL SWITCH	X															TOP LOWERED WHEN WET WILL CAUSE TOP TO SHRINK
	INADEQUATE BATTERY CHARGE	X	X														BALANCE LINK BRACKET ADJUSTMENT
	MOTOR	X	X														WEATHERSTRIPPING
	CIRCUIT BREAKER	X	X														QUARTER WINDOW ADJUSTMENT*
	FAULTY WIRING	X	X														DOOR WINDOW ADJUSTMENT*
	HYDRAULIC CYLINDER(S)	X	X	X													TOGGLE CLAMP ADJUSTMENT *
	AIR IN HYDRAULIC SYSTEM	X	X														PIVOT BRACKET ADJUSTMENT
	INSUFFICIENT HYDRAULIC FLUID	X	X														BENT LINKAGE
																	INSUFFICIENT HYDRAULIC FLUID
																	TOGGLE CLAMP ADJUSTMENT *
																	DOOR WINDOW ADJUSTMENT*
																	QUARTER WINDOW ADJUSTMENT*
																	WEATHERSTRIPPING
																	BALANCE LINK BRACKET ADJUSTMENT
																TOP LOWERED WHEN WET WILL CAUSE TOP TO SHRINK	

*Top should not be raised with windows up.

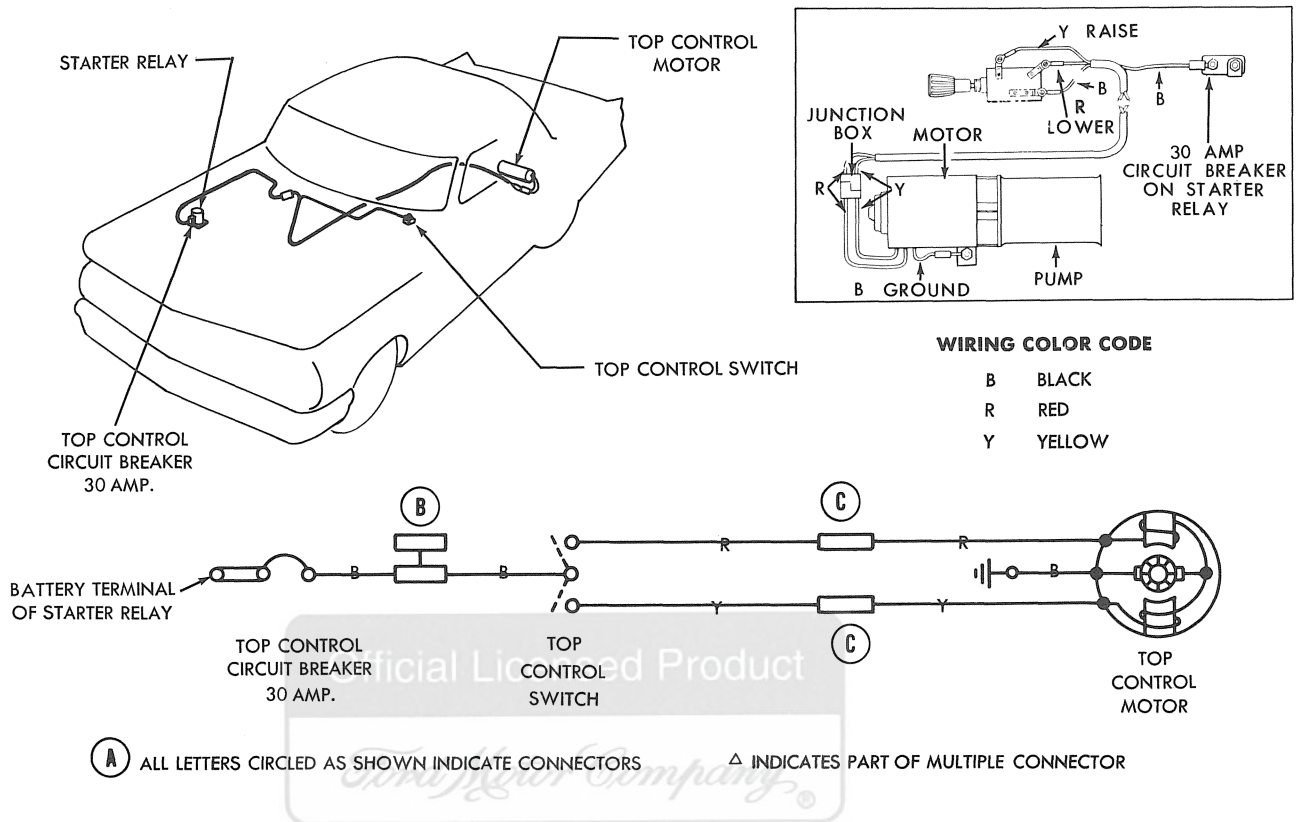


FIG. 4-5—Convertible Top Electrical Circuit (Typical)

black wire at the circuit breaker (located on the starter relay), and connect an ammeter in series in the circuit (Fig. 4-1). Operate the top control switch and note the ammeter readings. The current draw should be 20-40 amps. when operating for Galaxie and Monterey or 25-30 amps. for Falcon and Comet, and 40-50 amps. stalled, with a voltage reading of 9-10.

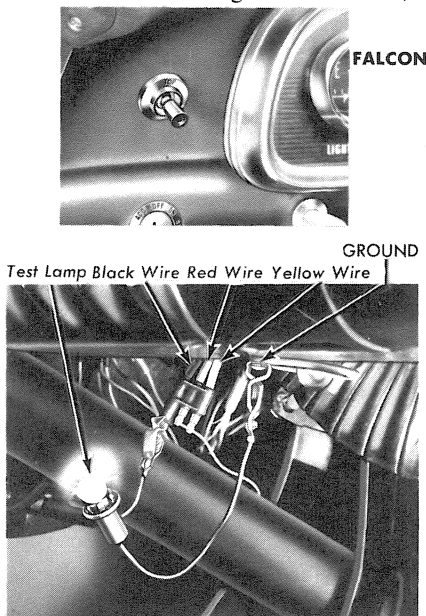
Make the stall test with the top in the stacked position. Current in excess of 75 amps. indicates a frozen pump or cylinder or a mechanical obstruction. Low amperage with the motor running and no top movement indicates a defective pump or low fluid level in the reservoir. (Fig. 4-5).

TOP CONTROL SWITCH

1. Connect one terminal of a test lamp to the black (feed) wire of the top control switch, and ground the other lead (Fig. 4-6). Figure 4-6 shows location of Falcon and Comet top control switch. Galaxie and Monterey similar location. If the

test lamp does not light, there is an open or short circuit between the battery and the switch.

2. If there is voltage to the switch,



connect a jumper wire between the black (feed) wire and the red wire, and then between the black wire and the yellow wire (Fig. 4-6). If the

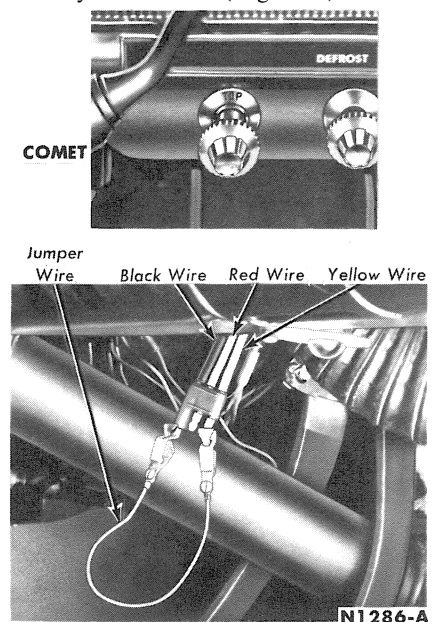


FIG. 4-6—Testing Switch Wiring

top motor operates, the switch is faulty and must be replaced.

CIRCUIT BREAKER

If there is no voltage at the top control switch, connect a jumper wire (Fig. 4-7) across the terminals of the circuit breaker (located on the starter relay) and operate the switch momentarily. If the top motor operates, the circuit breaker is faulty and must be replaced. If there is no voltage at the circuit breaker, check the black wire from the circuit breaker to the starter relay.

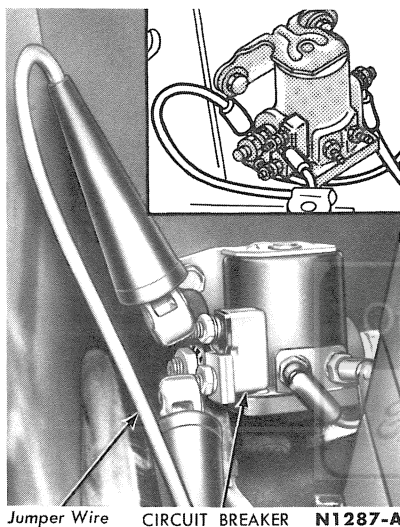


FIG. 4-7—Testing Circuit Breaker

SWITCH-TO-MOTOR WIRES

Disconnect the yellow and the red switch-to-motor leads at the junction block near the motor. Connect a test lamp between the yellow wire and a ground (Fig. 4-8), and check by operating the top control switch to raise the top.

Connect the test lamp between the red wire and a ground, and check by operating the switch to lower the top. If the test lamp does not light in either case, the wire from the junction block to the switch is open or shorted.

MOTOR

Check the operation of the motor by connecting first one motor lead and then the other directly to the battery positive terminal (Fig. 4-9). If the motor operates in either case, but will not operate when hooked into the wiring harness, check the wiring harness again for short or open circuits. If the motor will not work when hooked directly to the

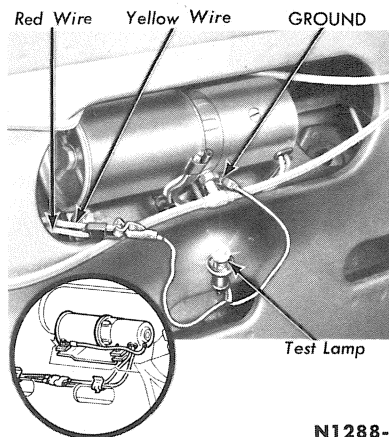


FIG. 4-8—Testing Switch to Motor Wiring

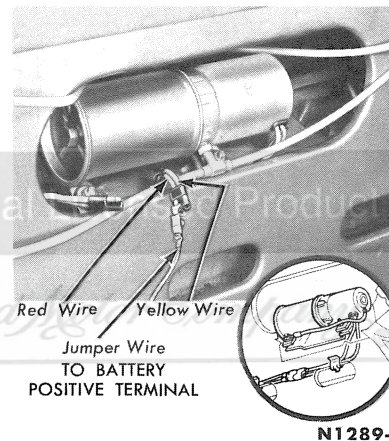


FIG. 4-9—Testing Motor

battery, check the black (ground) wire from the motor. If the motor still does not operate, it must be replaced.

HYDRAULIC CHECKS

Faulty hydraulic system operation can be caused by lack of fluid, leaks, air in the system, obstructions or kinks in the hoses, or faulty operation of a cylinder or the pump.

FLUID LEVEL CHECK

1. Raise the top and remove the rear seat cushion and seat back.

2. Place absorbent cloths below the filler plug.

3. Remove the filler plug, and check the fluid level. It should be level with the bottom edge of the hole. **Do not attempt to operate the top with filler plug removed.**

4. If the level is low, check the system for leaks, then add the required amount of fluid and replace the filler plug.

LIFT CYLINDER CHECK

Remove the rear seat cushion and seat back and the quarter trim panels. Operate the top control switch, and observe the operation of the lift cylinders for the following:

If the movement of the piston rods is sluggish or uneven, check the hoses from the pump to the cylinders for kinks.

If one piston rod moves more slowly than the other, the cylinder with the slower rod is defective and should be replaced.

If both rods move slowly, or do not move at all, disassemble and repair the pump.

4 TOP ADJUSTMENTS

If the top is misaligned, corrections should not be made until after a check has been made for bent linkage.

Before aligning the top, visually determine if the trouble results from top misalignment and/or window misalignment. It may be necessary to align both the top and the windows because of the relationship between the two. Adjustments of the door and quarter windows must be checked and any necessary changes made before making top adjustments. These windows must be in the fully closed position to insure proper adjustment as shown in Figure 4-4.

TOGGLE CLAMP ADJUSTMENT

The toggle clamps that hold the No. 1 bow against the header can be adjusted to provide a good seal.

1. To determine which side is not sealing, check the weatherstrip between the No. 1 bow and the header with a 3" x 5" card. A reasonable pull must be felt as the card is pulled out. Both toggle clamps need not be adjusted unless necessary.

2. Release the toggle clamps, and thread the toggle hook in or out until adequate sealing pressure is applied at the header weatherstrip.

MAIN PIVOT BRACKET ADJUSTMENTS

The main pivot bracket support plate is attached to the quarter inner panel and wheelhouse support (Fig. 4-10).

The main pivot bracket support provides for shifting the entire top assembly fore and aft as well as vertically.

FORE-AND-AFT AND UP-AND-DOWN ADJUSTMENT

This adjustment moves the top assembly straight forward or rearward. It also establishes the side rail to glass alignment.

1. Disengage both cylinders from the top linkage.
2. Completely loosen all tacking strip retaining bolts.
3. Loosen balance link support mounting bolts.
4. Loosen the screws which retain the main pivot bracket support to the inner quarter panel and to the wheelhouse support (Fig. 4-10).
5. Shift the entire pivot bracket support fore or aft, up or down, as required to bring the rear side rail in proper relationship to the quarter glass.
6. All items loosened above must be retightened and/or readjusted.

LATERAL ADJUSTMENT

This adjustment is provided to control material interference at the quarter belt moulding and establish a correct glass centerline by properly locating the side rail.

1. Loosen the four screws which retain the main pivot bracket to the main pivot bracket support (Fig. 4-10).
2. Shift the main pivot bracket inboard or outboard as necessary to obtain the specified $\frac{3}{8}$ " clearance between the side rail to quarter panel at the belt line. Re-tighten the bolts.
3. Check the operation of the quarter glass and readjust the glass angle and/or side rail weatherstrips as necessary.

BALANCE LINK AND BRACKET ADJUSTMENT

The balance link adjusting bracket is mounted on the inside of the main pivot bracket support (Fig. 4-10). Two adjustments are provided at the bracket. Sliding the bracket in the elongated mounting holes (Fig. 4-11) permits proper stacking of the top in the well. Turning the Allen head adjusting screw in the brackets corrects sag or crown in the side rails (Fig. 4-11).

TOP STACK

When the top is stacked, it may be too high in the well. If the top stacks too high, it will be difficult to fasten down the boot. To obtain proper stacking, proceed as follows:

1. Loosen the three balance link adjusting bracket mounting screws

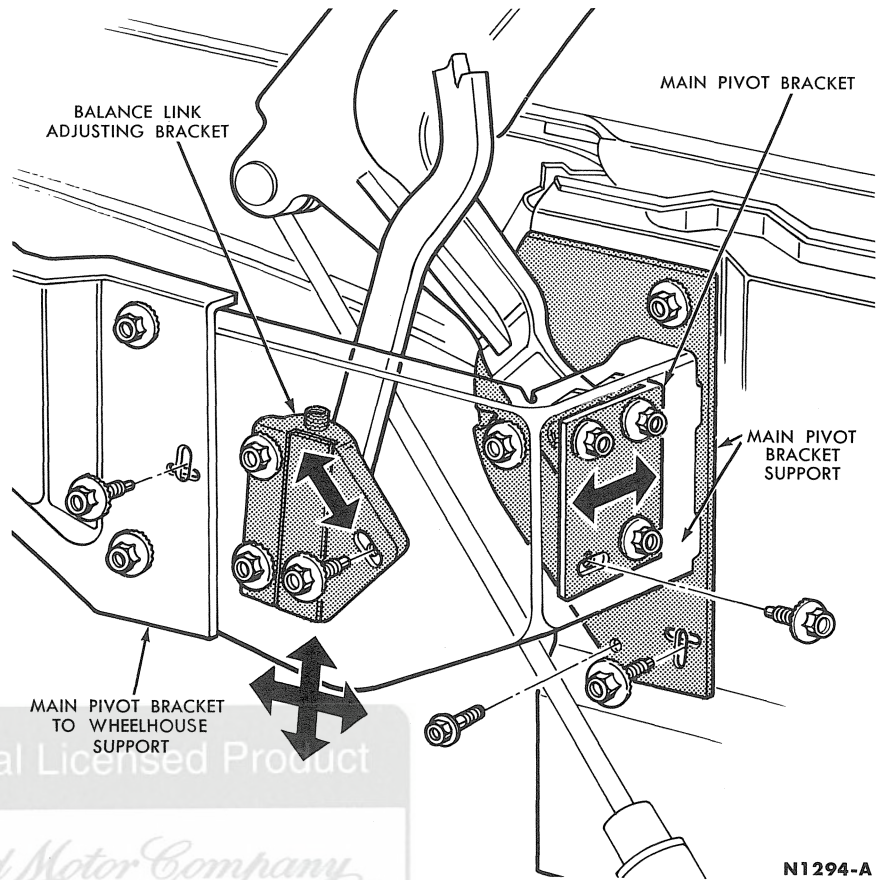


FIG. 4-10—Linkage Adjustments (Typical)

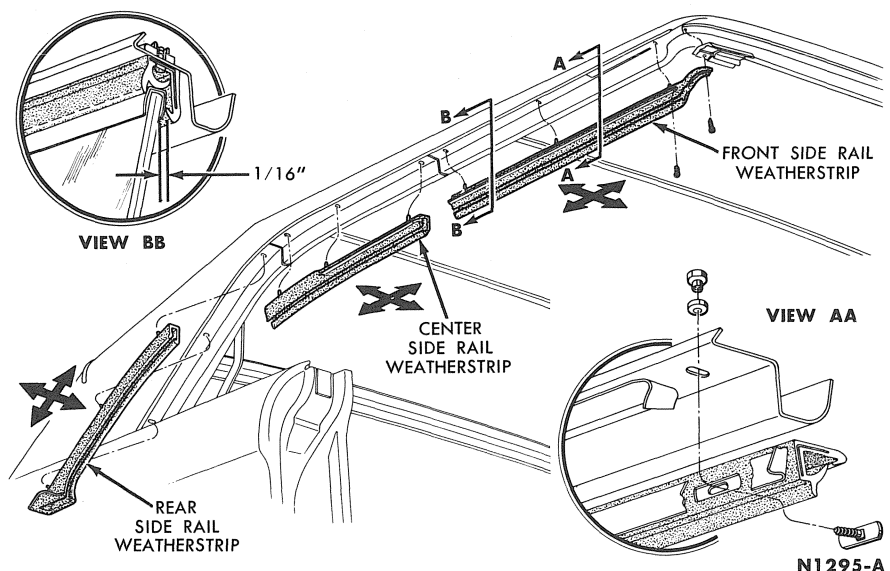


FIG. 4-11—Side Rail Weatherstrip Adjustments

(Fig. 4-11). The balance link pivot shaft should be in the center position of the support bracket by adjusting

the Allen screw (Fig. 4-11).

2. Allow the balance link support plate to position itself with the top

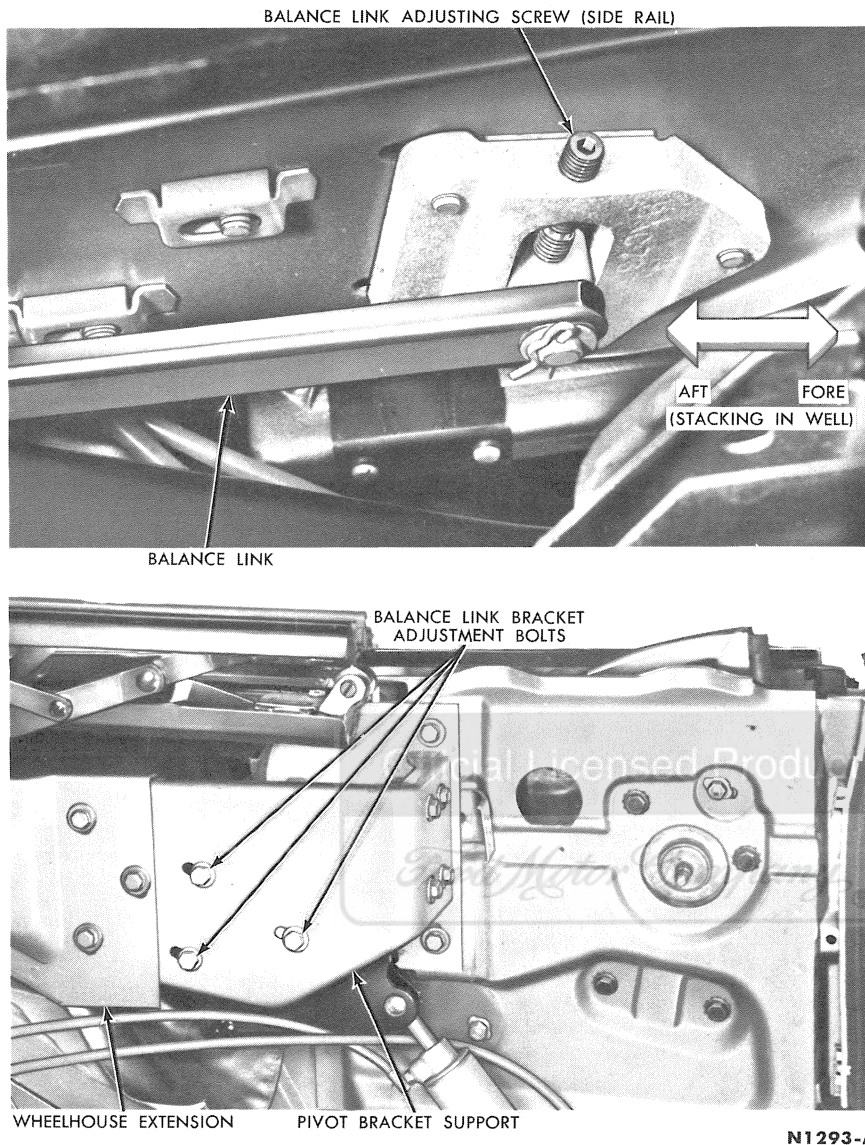


FIG. 4-12—Balance Link and Bracket Adjustment

5 SPECIFICATIONS

MAXIMUM AMPERAGE

OPERATION	GALAXIE—FALCON MONTEREY—COMET
TOP LOWER CYCLE:	35
TOP RAISE CYCLE:	35
TOP RAISE OR LOWER CYCLE TIME	16

Note: 1. While making amperage draw test a battery reading of 11.5-12.5 volts must be maintained.
2. Momentary peak currents above specified not significant.

in the stacked position.

3. Tighten the three balance link support adjusting screws.

SIDE RAIL SAG

Have the top locked in the fully raised position.

If the side rail sags at the door glass or the quarter glass, adjust as follows:

1. Use the top of the door glass and quarter glass as reference points to determine the proper level of the side rail.

2. Remove the quarter trim panels.

3. Partially loosen the balance link bracket to main pivot support attaching screws (Fig. 4-12).

4. With an Allen wrench, turn the adjusting screw in the balance link adjusting bracket down to raise the side rail.

5. If the side rail is too high or crowned above the windows (this does not usually occur), turn the adjusting screw out to lower the side rail. Tighten the balance link bracket attaching screws after obtaining the correct adjustment.

SIDE RAIL WEATHERSTRIP ADJUSTMENTS

The side rail weatherstrips can be adjusted laterally and also fore and aft (Fig. 4-11).

Adjust the weatherstrips laterally so that the sealing lips make full contact with the door and quarter window frames.

Adjust the weatherstrips fore or aft to butt the ends of the weatherstrips together to provide a water-tight seal.

DOWEL ADJUSTMENT (GALAXIE—MONTEREY)

After making any top adjustment, check the dowel alignment and adjust the dowels as required. The dowels can be adjusted laterally by loosening the dowel attaching screws in the header. Move the dowels so that they engage the striker plates in the header, then tighten the dowel attaching screws.

(FALCON—COMET)

The dowel striker plates can be adjusted laterally to engage the dowels in the No. 1 bow. To adjust the striker plates, loosen the two attaching screws and move them as required to engage the dowels. Tighten the two attaching screws in each dowel striker plate.

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