PART 18-3 CONVERTIBLE TOP

1 DESCRIPTION AND OPERATION

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 is accomplished by electrically powered mechanical and hydraulic linkage.

The top operation is 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.

The car should be stopped and all side windows lowered before the top is operated. The ignition switch must me in the ACC or ON position, preferably with the engine running. The transmission selector lever must be in either the N or P position, 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. Push the top control switch down 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 down again until the top retract cycle is completed.

To erect (raise the top), push the top control switch up 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.

ELECTRICAL SYSTEM

The electrical system 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.

There are 11 relays; the top con-

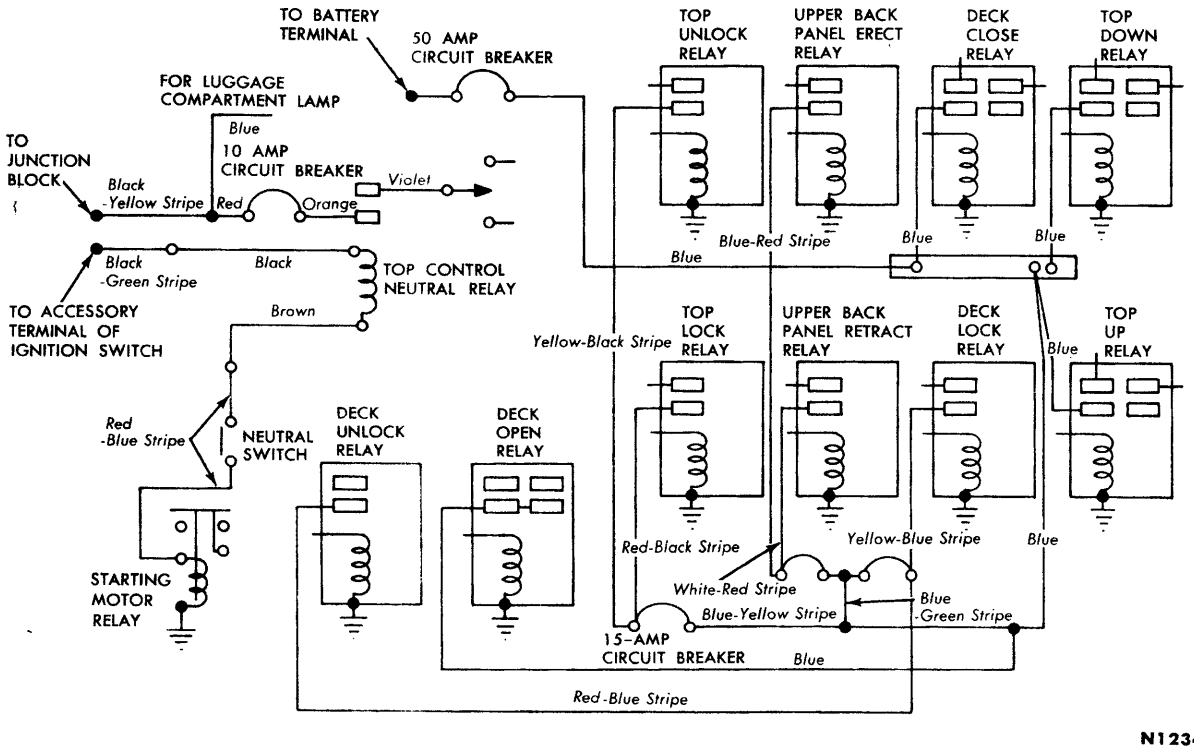


FIG. 1—Control and Power Feed Circuits

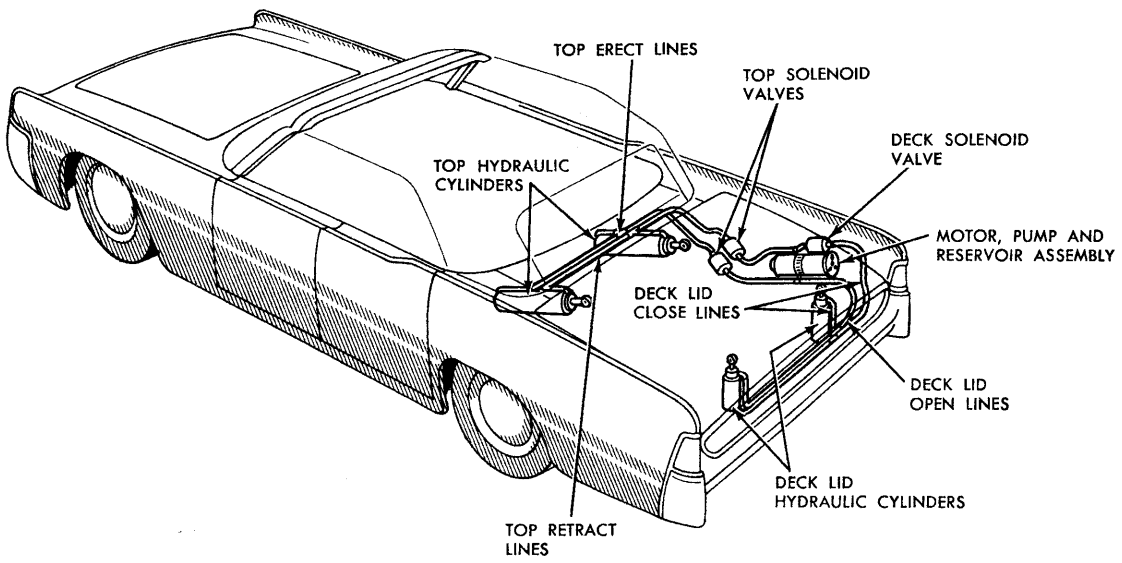


FIG. 2—Hydraulic System

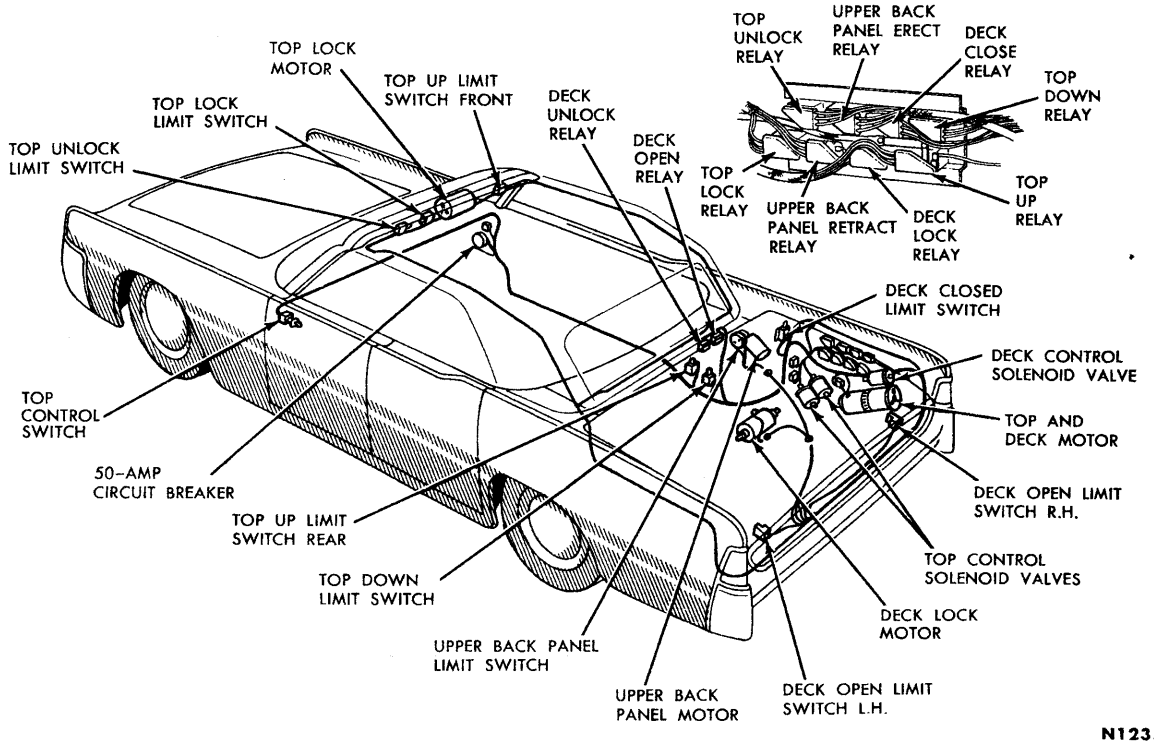


FIG. 3—Parts Location

trol neutral relay is used as a safety device in the control circuit. This relay is located on the horn relay mounting plate located behind the right cowl panel. 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 control circuit to the top control switch is identical for both the top retract cycle and top erect cycle. Current flows from the ignition switch, through the top control neutral 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.

The remaining 10 relays are used to energize the motors and the three solenoids (Fig. 1).

The electrical system is protected by five circuit breakers; a 50-ampere circuit breaker in the power circuit, a 10-ampere circuit breaker in the top control circuit, and three individual 15-ampere circuit breakers, one for each motor feed circuit. The 50-ampere circuit breaker is located on the wiring and circuit breaker assembly and the 10-ampere circuit breaker is located in the fuse box.

HYDRAULIC SYSTEM

The deck lid and convertible top assembly are each operated by two hydraulic cylinders, receiving pressure from one electrically powered

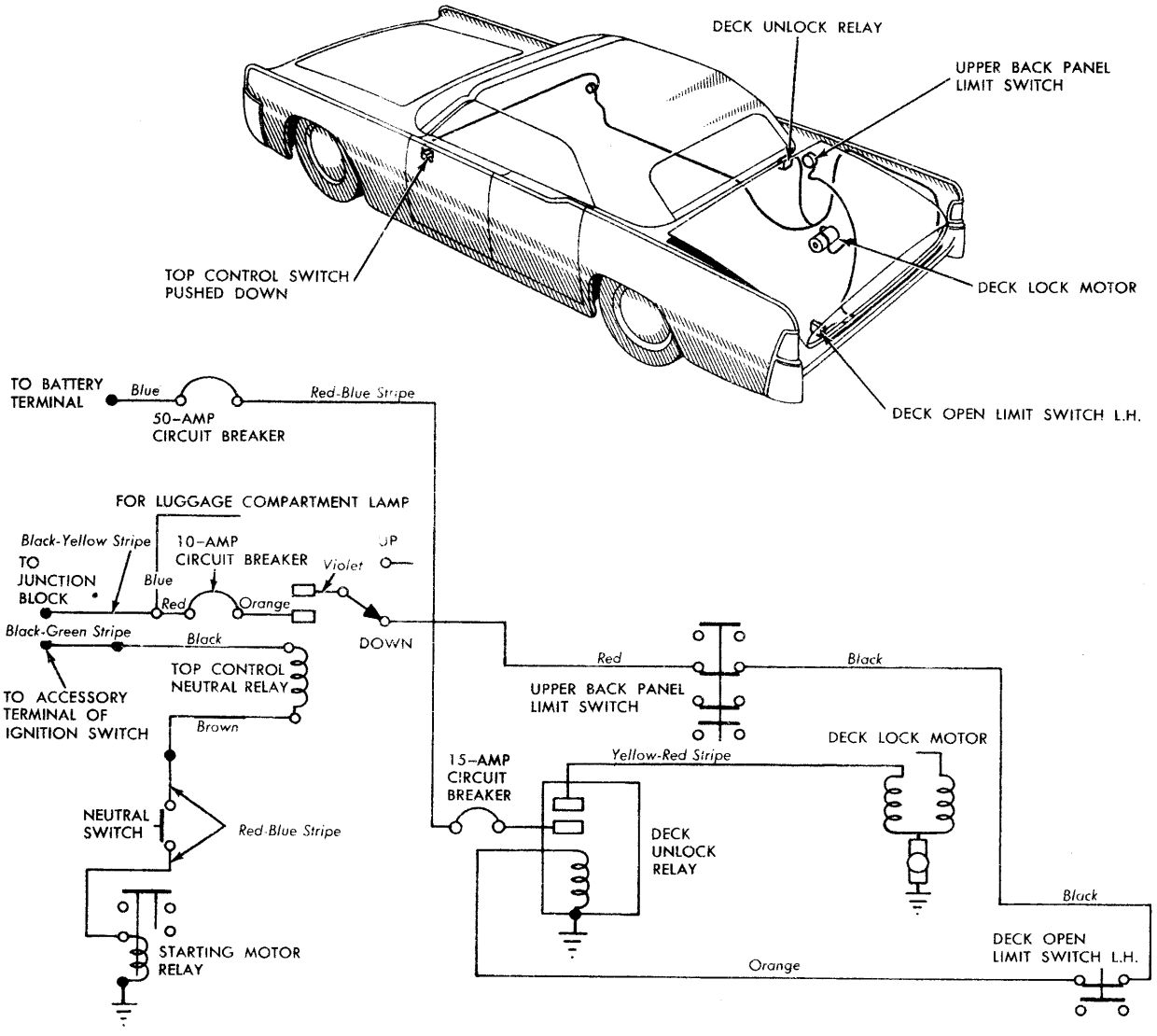


FIG. 4—Deck Lid Unlock—Top Retract Cycle

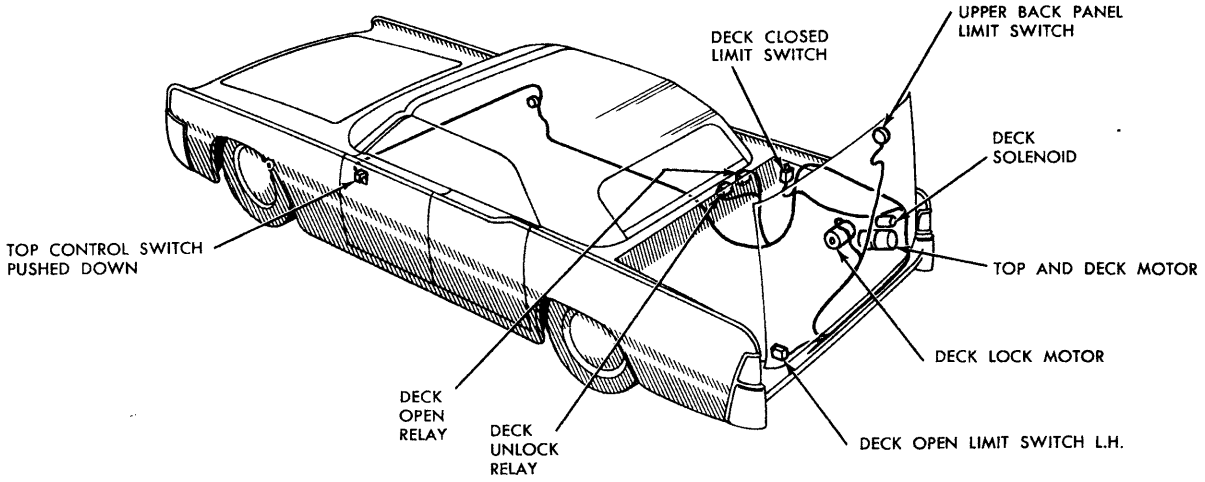
reversible motor and pump. The hydraulic fluid pressure is controlled by three electrically activated solenoid valves, two for the top assembly, and one for the deck lid (Fig. 2).

ELECTRICAL COMPONENTS

The location and proper nomenclature for each electrical component is illustrated in Fig. 3. The function of these components is explained in detail with the circuits of each phase of the retract and erect cycle in Figs. 4 through 15.

TOP RETRACT CYCLE
DECK LID UNLOCK

With the top control switch in the top down position (Fig. 4), current flows from the top control switch, through the upper back panel limit switch, the left hand deck open limit switch (usually called deck open limit switch L.H.), 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-ampere circuit breaker, through the 15-ampere circuit breaker to the deck lock motor. The motor is energized and the deck lid is unlocked.



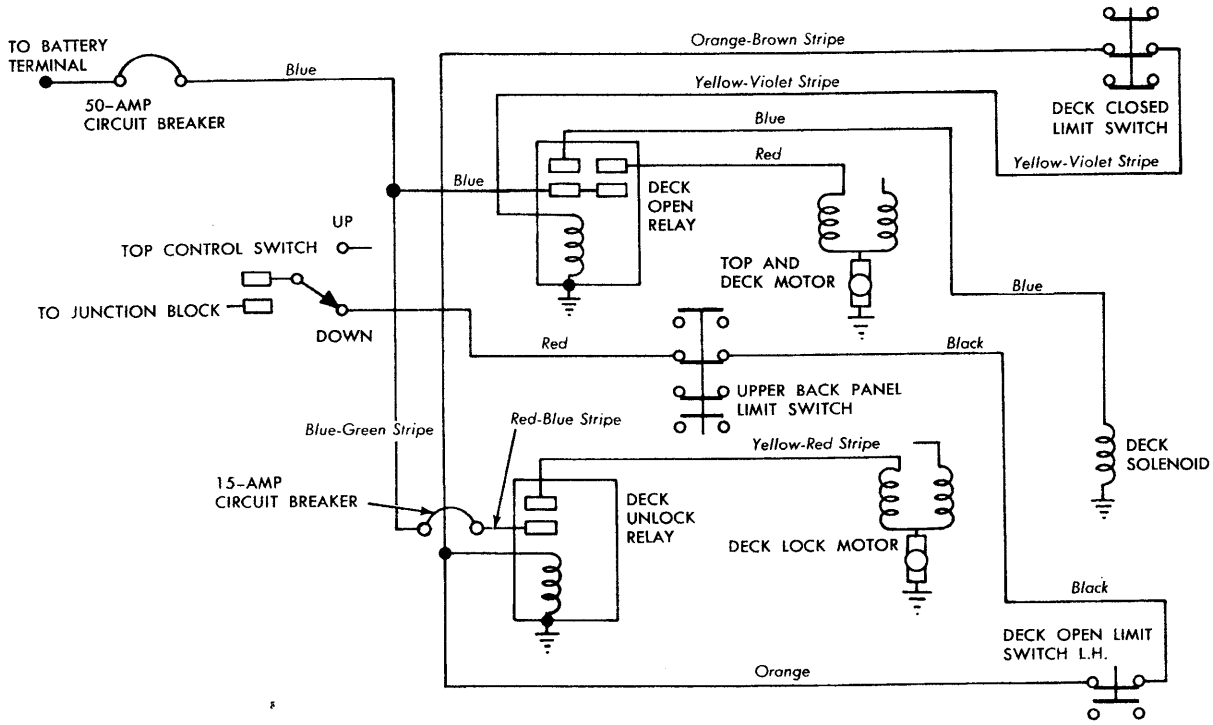


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FIG. 5—Deck Lid Open—Top Retract Cycle

DECK LID OPEN

As soon as the deck lid is unlocked, the deck lock limit switch contacts are repositioned (Fig. 5). The current now flows from the top control switch through the back panel retract limit switch, through the deck open limit switch L.H., 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-ampere 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. The deck locks continue to operate until the deck is completely open.

UPPER BACK PANEL ERECT

When the deck lid is completely open, the plunger of the deck open limit switch L.H. is depressed and the switch contacts are repositioned (Fig. 6). The current now flows from the top control switch, through the deck open limit switch L.H., the upper back panel relay contacts close and the power circuit is completed through the 15-ampere circuit breaker to the upper back panel motor. The motor is energized and the upper back panel is erected.

TOP UNLOCK

As soon as the upper back panel is in the erect position, the upper back panel limit switch is actuated and the switch contacts are repositioned (Fig. 7). The current now flows from the top control switch, through the top unlock limit switch, the upper back panel limit switch and the top unlock relay coil to ground. The relay contacts close and complete the power circuit through the 15-

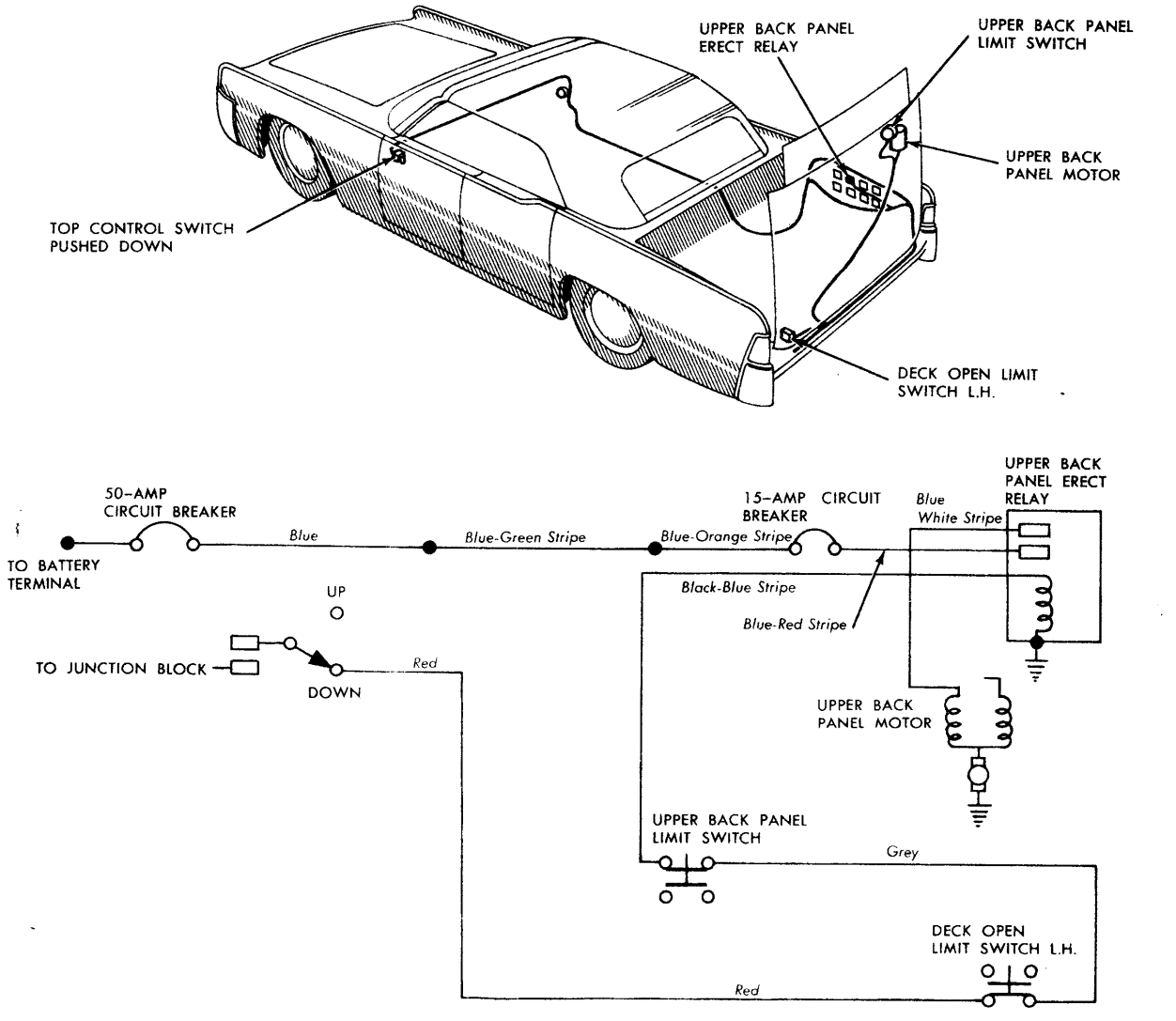


FIG. 6—Upper Back Panel Erect—Top Retract Cycle

ampere circuit breaker to the top lock motor. The motor is energized and the top is unlocked.

TOP RETRACT

When the top is unlocked, the top unlock limit switch is actuated and the switch contacts are repositioned (Fig. 8). 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. 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.

DECK LID CLOSE AND LOCK

When the top is stowed in the luggage compartment, the top down limit switch is actuated and the switch contacts are repositioned (Fig. 9). The current now flows from the top control switch, through the top down limit switch, the deck closed limit switch, and the deck close relay coil to ground. The relay contacts are closed and the power circuit is complete to the top-deck motor and the deck control solenoid valve.

The deck control solenoid is energized and hydraulic lines are opened to the deck control cylinders. The top-deck motor is also energized and the deck lid is closed. This action is interrupted when the deck lid depresses the plunger on the deck closed limit switch.

At the same time the deck lid is closing, the deck lock motor is energized. This is accomplished by the current flowing from the top down limit switch through the deck lock relay to ground. This closes the re-

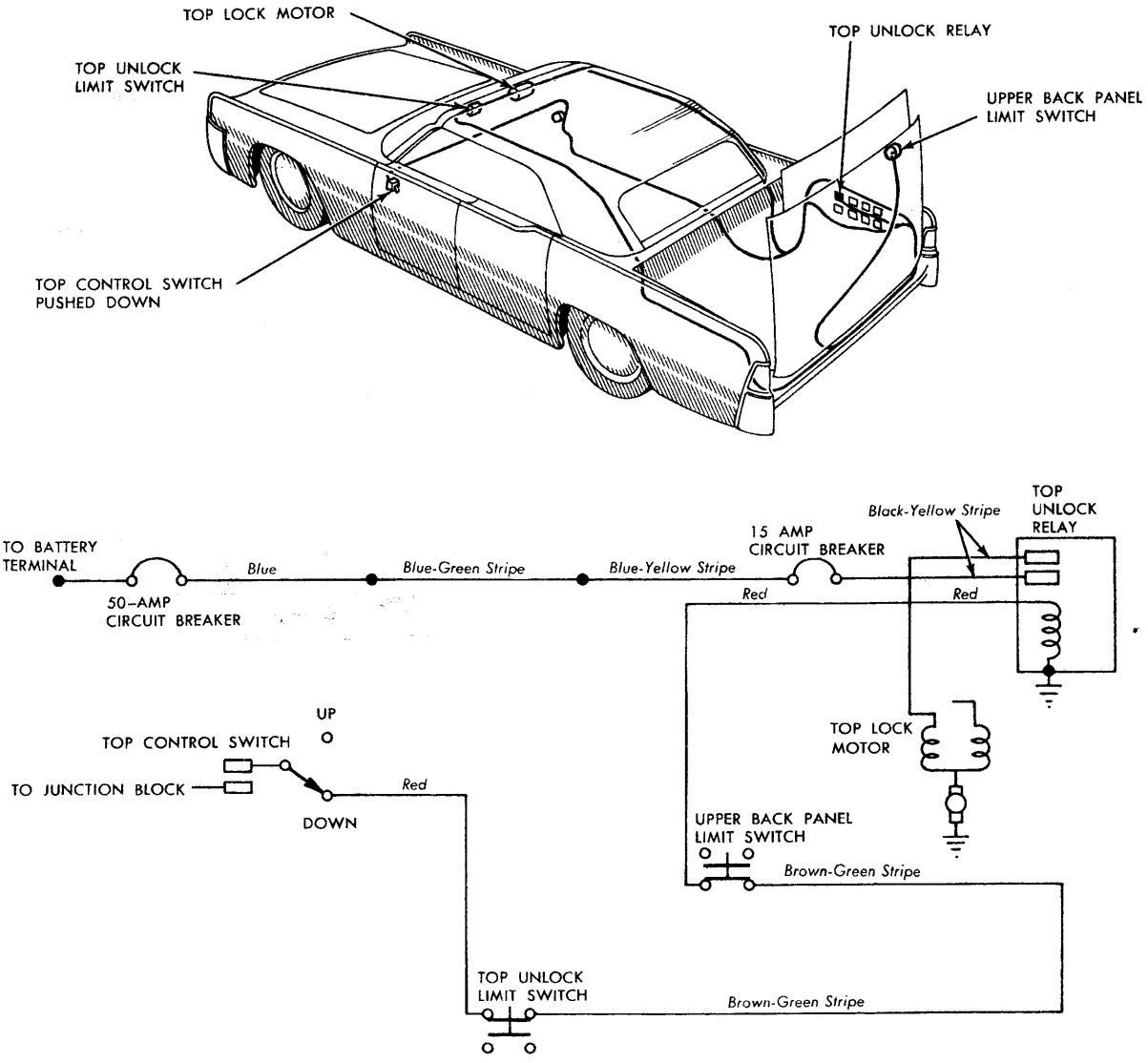


FIG. 7—Top Unlock—Top Retract Cycle

lay contacts and completes the power circuit to the deck lock motor. The deck lock motor is energized until the top control switch is released.

TOP ERECT CYCLE

DECK LID UNLOCK

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 and the deck unlock relay coil to ground (Fig. 10). 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.

DECK LID OPEN

As soon as the deck lid is unlocked, the deck closed limit switch contacts are repositioned (Fig. 11). Now the current flows from the deck open limit switch R.H., through the deck closed 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 completed. The deck solenoid valve is 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. The deck lock motors continue to run until the deck is completely open.

TOP ERECT

When the deck lid is completely opened, the deck open limit switch R.H. plunger is depressed and the switch contacts are repositioned (Fig.

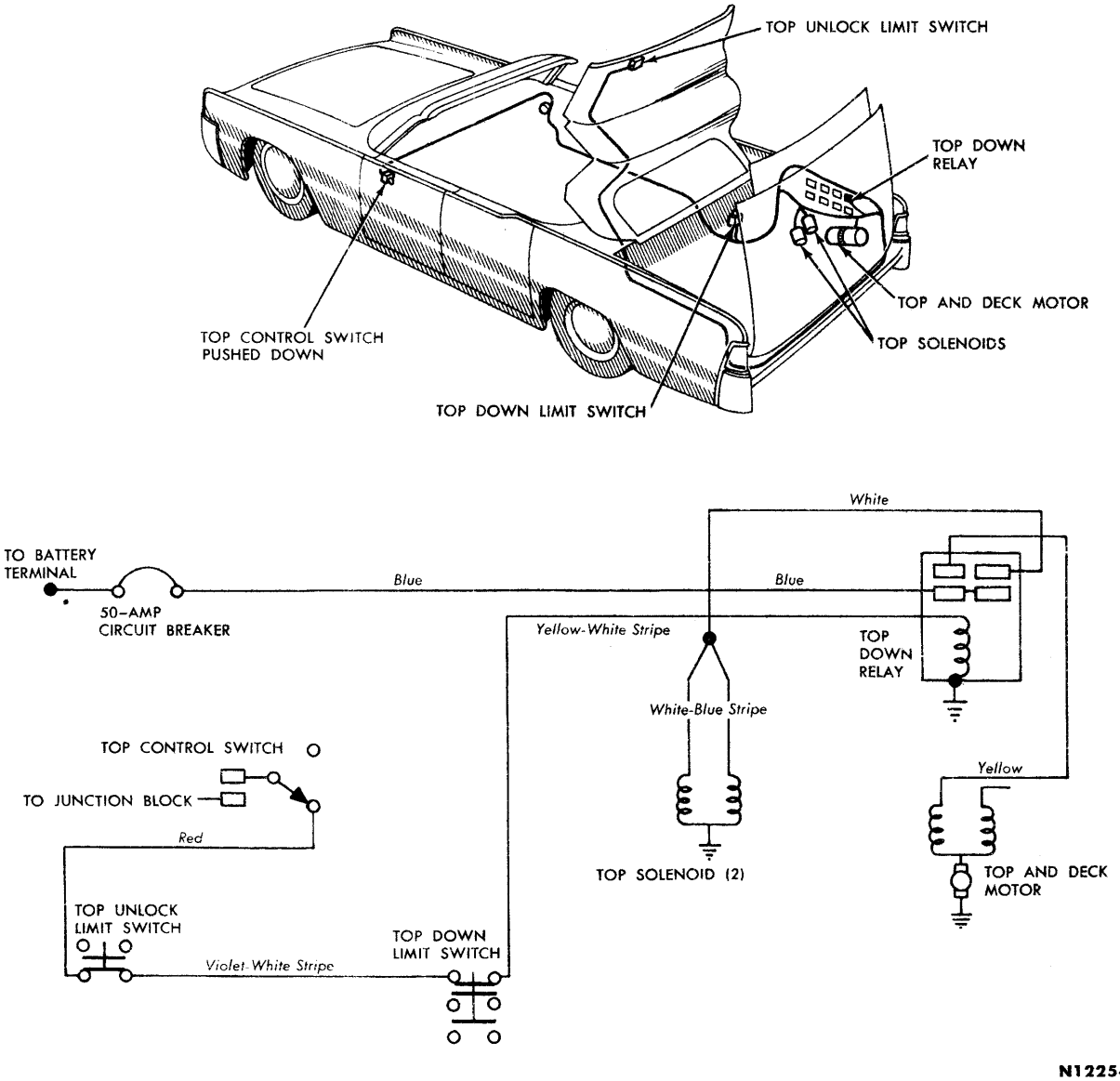


FIG. 8—Top Retract—Top Retract Cycle

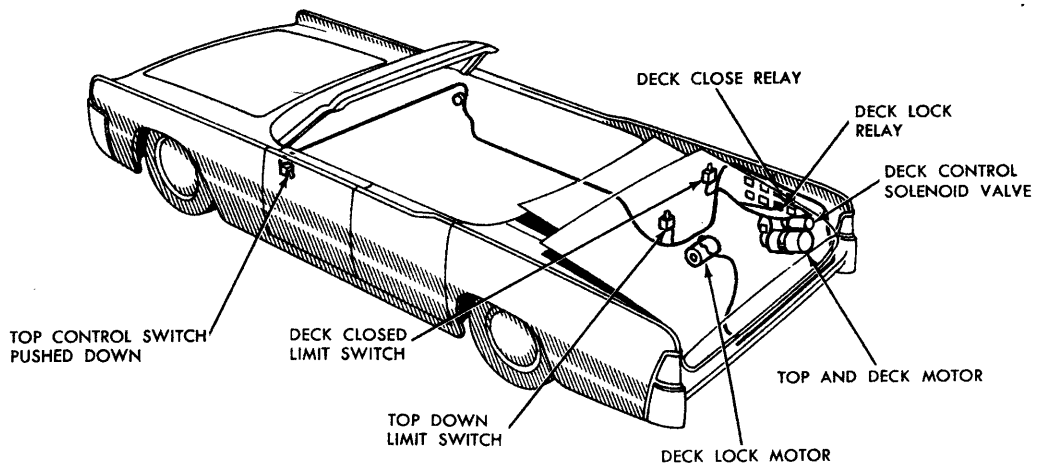
12). The current now flows from the top control switch, through the top up limit switch, the deck open limit switch R.H., and the top up relay to ground. The relay multiple contacts are closed and the power circuits are completed to the top-deck motor and the two top control solenoid valves. The two top control solenoid valves when energized open the hydraulic lines to the top hydraulic control cylinders; at the same time the top-deck motor is energized and the top is erected.

TOP LOCK

As the top approaches the full up position, and the package tray seats in position, the top up limit switch rear is depressed, opening the circuit to the top up relay (Fig. 13). This stops the top motor and pump assembly. At the same time the top comes in contact with the windshield header, the contacts of the top up limit switch front are closed. The current now flows from the top control switch, through the top up limit switch front upper back panel 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. The lock motor remains energized until the upper back panel is retracted.

UPPER BACK PANEL RETRACT

During the top locking action, the top lock limit switch is actuated and the switch contacts are closed (Fig. 14). This permits the current to flow from the top control switch, through the top lock limit switch, the upper



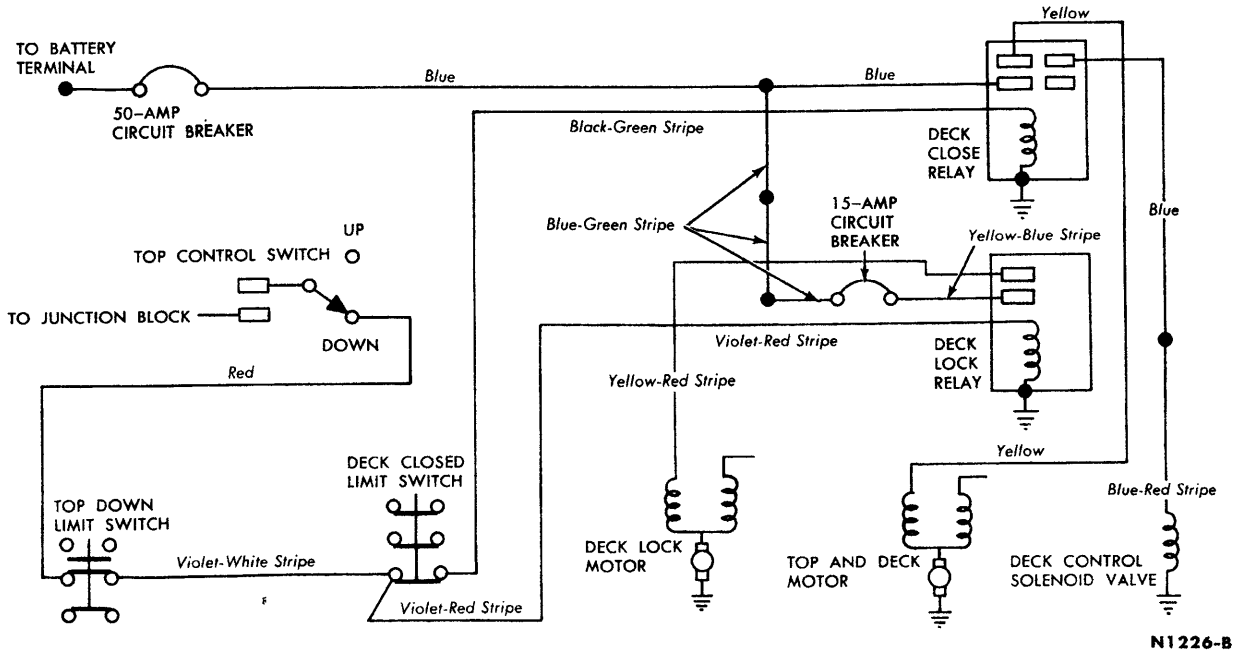


FIG. 9—Deck Lid Close and Lock—Top Retract Cycle

back panel limit switch, and the upper 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. The top lock motor remains energized until the upper back panel is fully retracted.

DECK LID CLOSE AND LOCK

As soon as the upper back panel is retracted, the upper back panel limit switch is actuated and the switch contacts are repositioned (Fig. 15). This stops the top lock motor and the upper back panel motor. The current now flows from the top control switch, through the upper back panel limit switch, the deck closed limit switch, and the deck close relay to ground. The deck close relay multiple contacts close and the power circuits are complete to the deck control solenoid valve and the top-deck motor. The deck control solenoid valve and the top-deck motor are energized, closing the deck lid. Current also flows through the upper back panel limit switch, through the deck lock relay to ground. The relay is energized, closing the circuit to the deck lock motor. As the deck lid reaches the

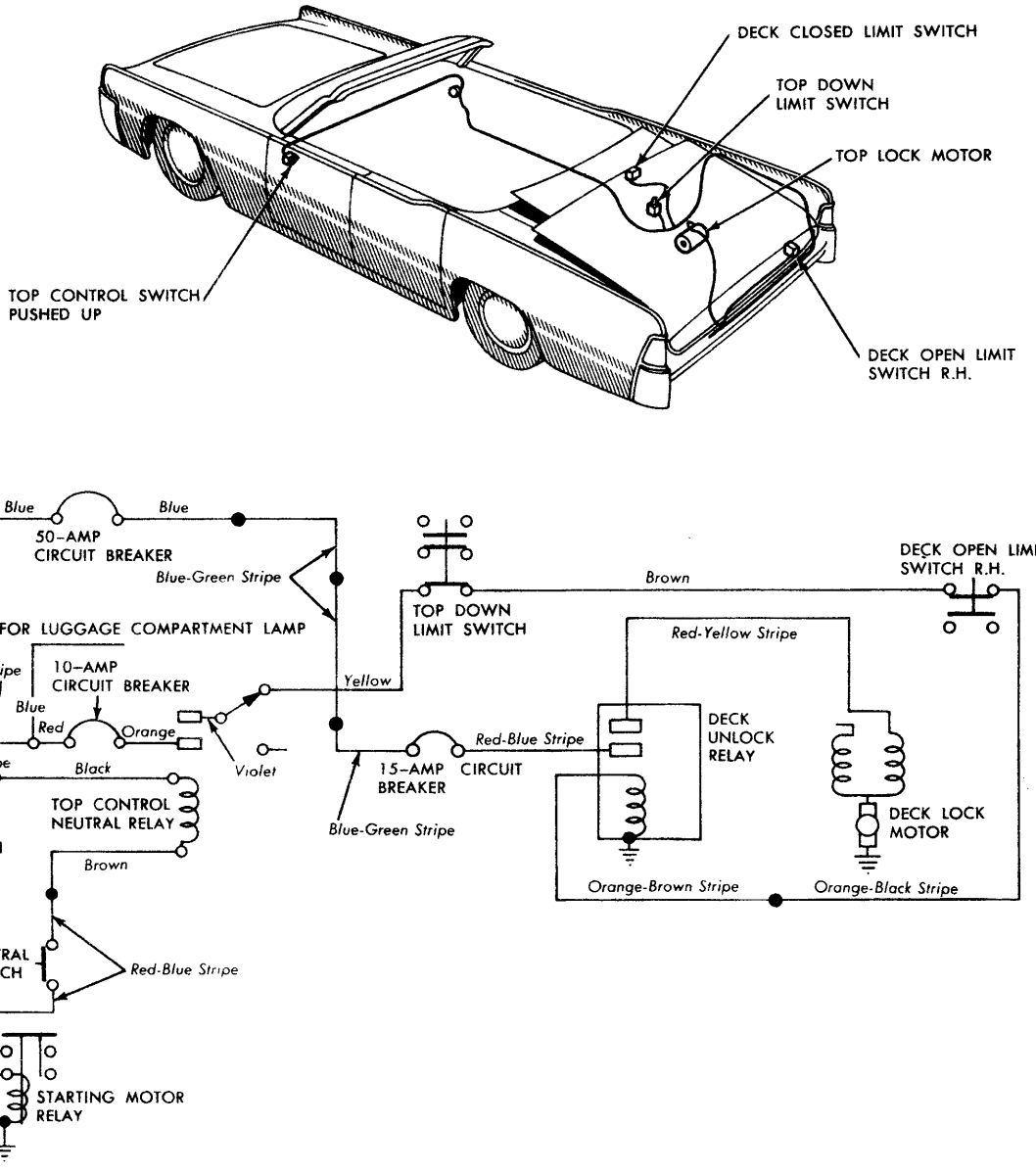


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FIG. 10—Deck Lid Unlock—Top Erect Cycle

closed position, the deck closed limit switch is depressed and the deck close circuit is broken. The deck lock circuit will continue to be energized, and the locks will ratchet until the top control switch is released.

2 DIAGNOSIS AND TESTING

To properly accomplish diagnosis and testing, 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

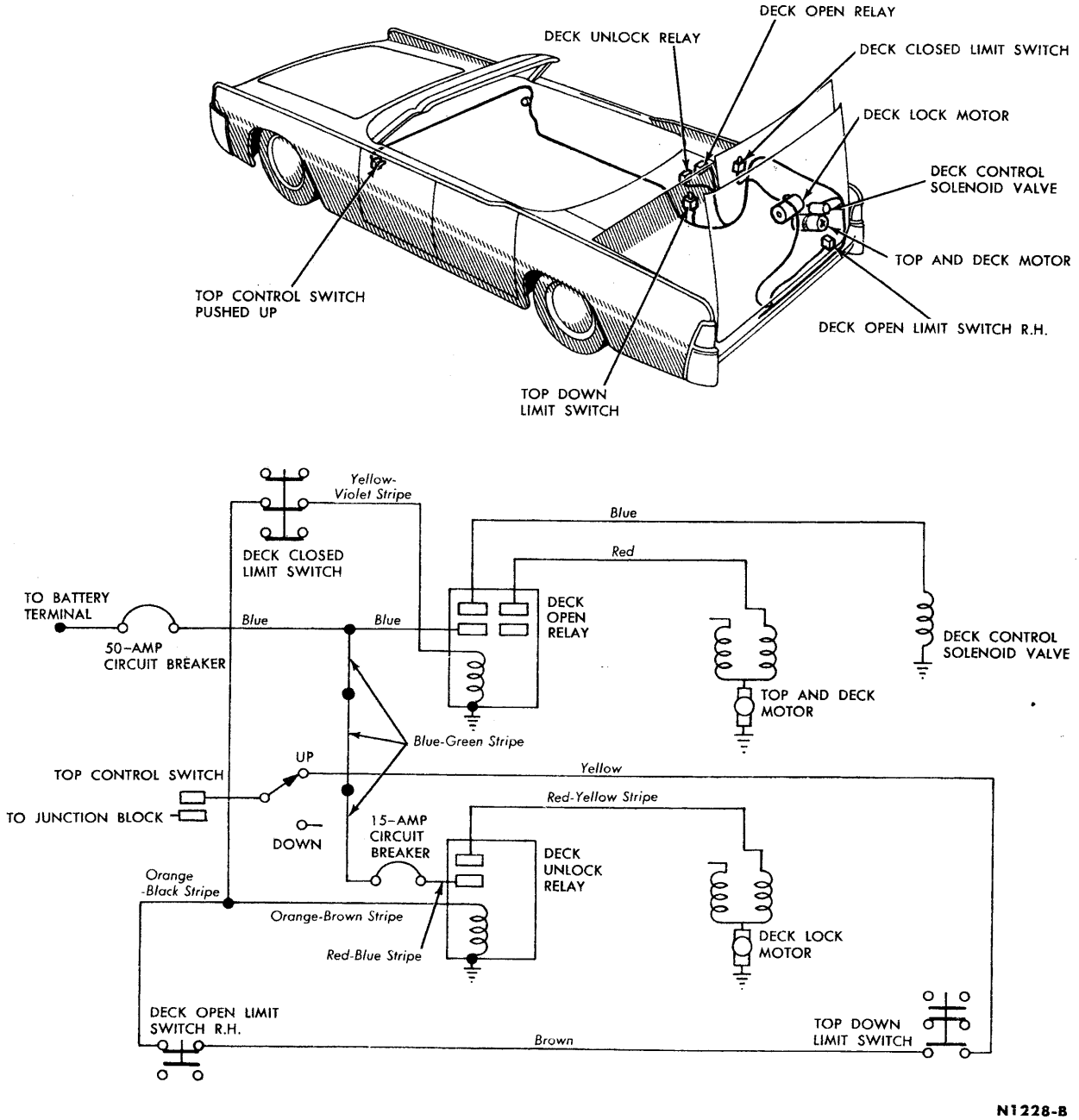


FIG. 11—Deck Lid Open—Top Erect Cycle

power relay by means of a jumper wire. The following cautions must be observed:

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

2. 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 bypassing various limit switches and operating the motors directly. If bypassing 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 (power circuit) circuit breaker (50-ampere) must be checked and it must be ascertained that the motor is not jammed or stalled.

If bypassing 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 bypassed 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 should be tested, as they control the complete top circuit. If no voltage is available at the top control neutral relay, the control circuit 10-ampere 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 of the top or deck lid assemblies is often accompanied by a loud and irregular pump

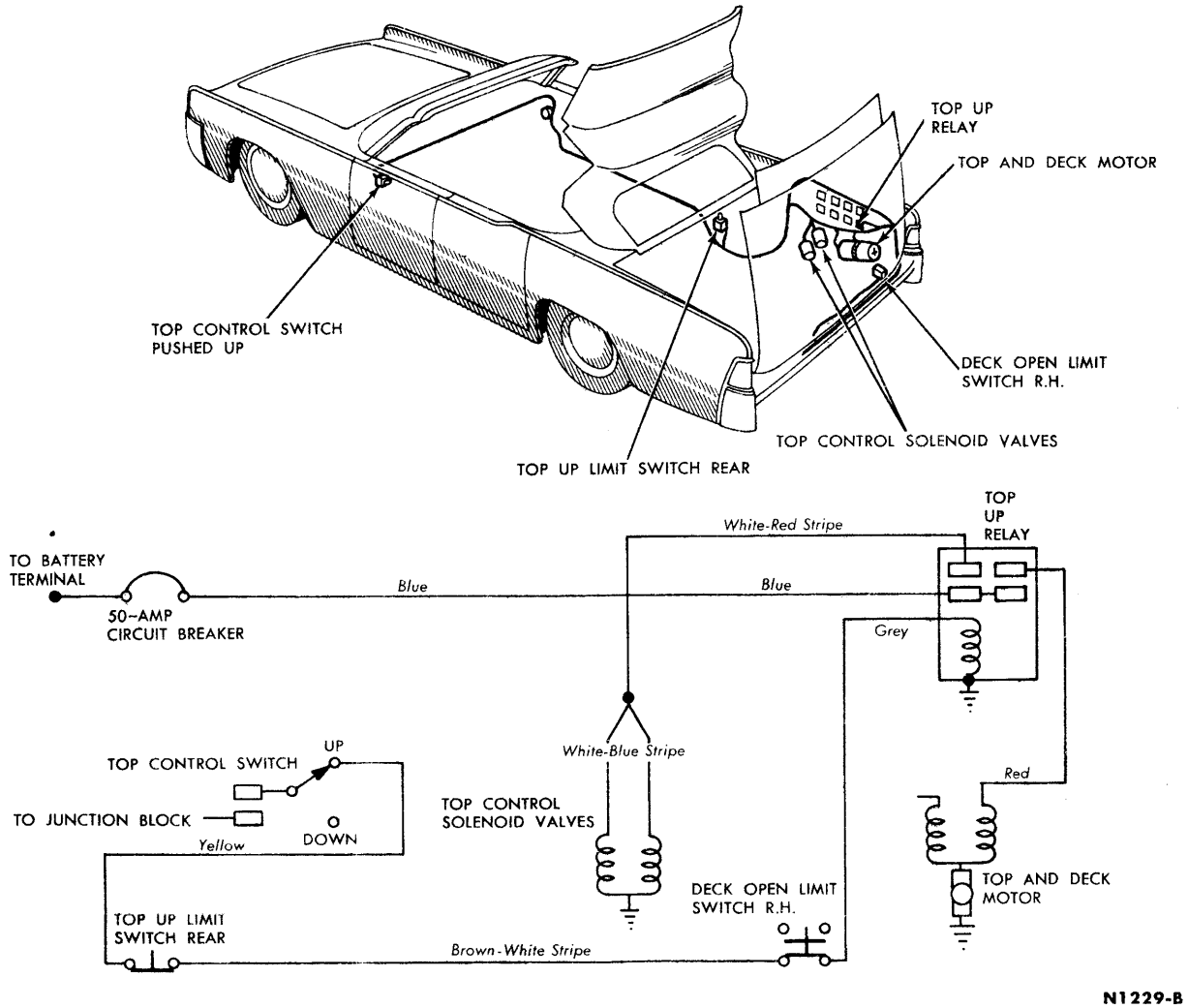


FIG. 12—Top Erect—Top Erect Cycle

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.

EMERGENCY PROCEDURES

MANUALLY UNLOCKING TOP

If 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.

1. Remove the rear seat cushion and seat back. This will allow access to the deck unlock relay and deck open relay.

2. Fabricate a jumper wire (12 gauge), that has a sufficient capacity to conduct 50 amperes of current (Fig. 16).

3. Remove the multiple plug from the deck unlock relay. This is the relay that is closest to the centerline of the car.

4. Energize the deck unlock motor directly through the multiple plug with the jumper wire. If the motor does not operate, it will be necessary to mechanically unlock the deck lid. (See "Mechanically Opening and Raising the Deck Lid" in this section).

5. After the deck lid is unlocked, actuate the top control switch to

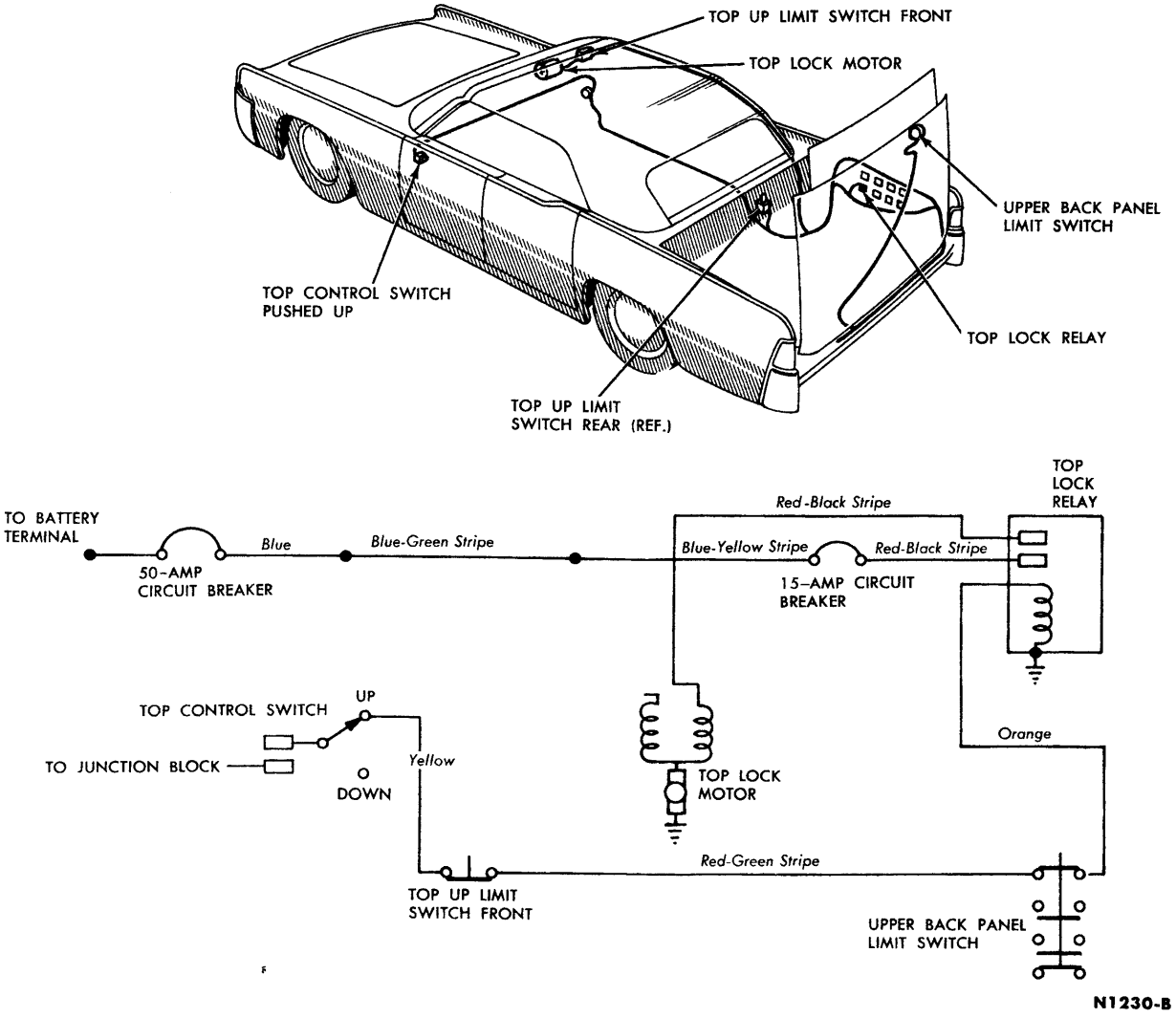


FIG. 13—Top Lock—Top Erect Cycle

determine if the deck lid will open in the normal manner.

6. If the deck lid will not open by operating the top control switch, remove the multiple plug from the deck open relay.

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

Mechanically 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 one 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 an follows:

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

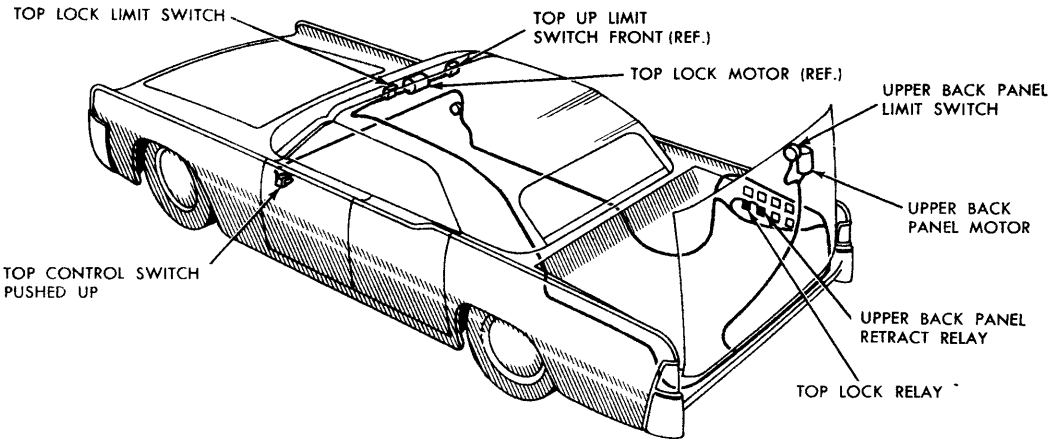
b. From underneath the rear cross member, remove the deck lid hydraulic cylinder attaching screws (both sides).

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

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, it 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 DC 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**



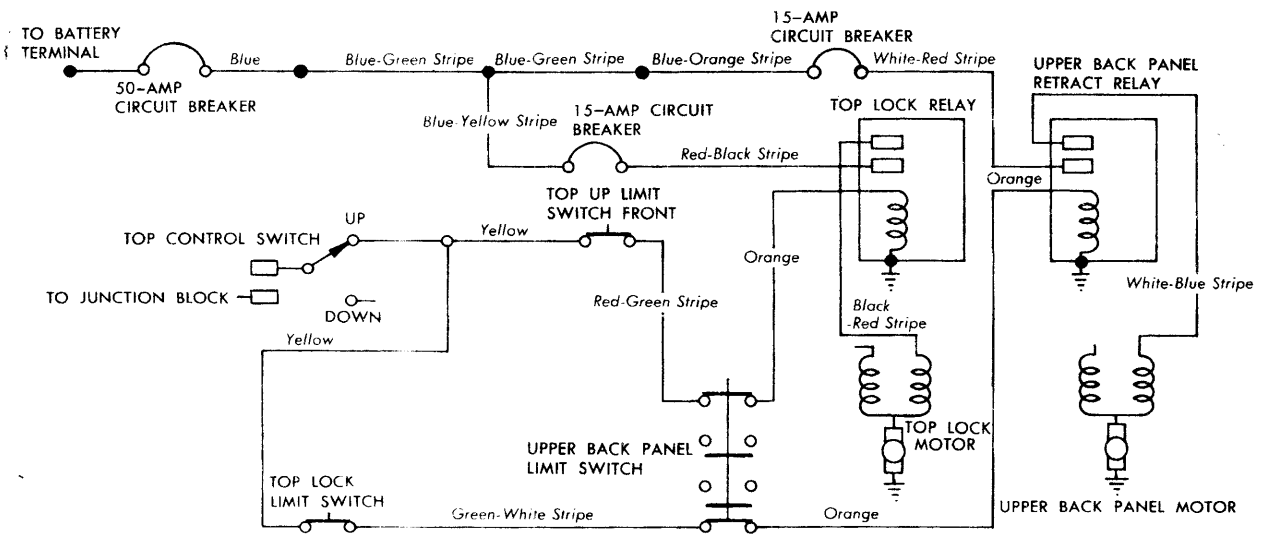


FIG. 14—Upper Back Panel Retract—Top Erect Cycle

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.

Figs. 17 through 24 illustrate the correct adjustment of the limit switches.

TROUBLE DIAGNOSIS

Before a systematic trouble shooting procedure is attempted a trouble free source of current should be established at the top control switch and the service side of the 50-ampere circuit breaker (Fig. 3).

POWER SUPPLY CHECK PROCEDURE

1. Check from the blue wire terminal of the 50-ampere circuit breaker to ground, using a simple test lamp, a voltmeter or other appropriate test equipment, to determine that an adequate voltage supply is available at this point.

2. Check for full functioning of the neutral switch and top-control neutral relay by placing the transmission selector lever in neutral and starting the engine. If any malfunction in this (starting) circuit is evident, check the circuit and make repairs.

3. With the starter circuit functioning properly, turn the ignition switch to the ON or ACC position and check for an adequate voltage supply at the violet wire terminal of the top control switch. Use the same equipment as in step 1.

4. If difficulties are encountered in the deck unlock and/or deck lid open phases of the top retract (top erect) cycle, when the deck lid is subsequently open for access, check the voltage supply at the bus bar on the relay panel located on the inside

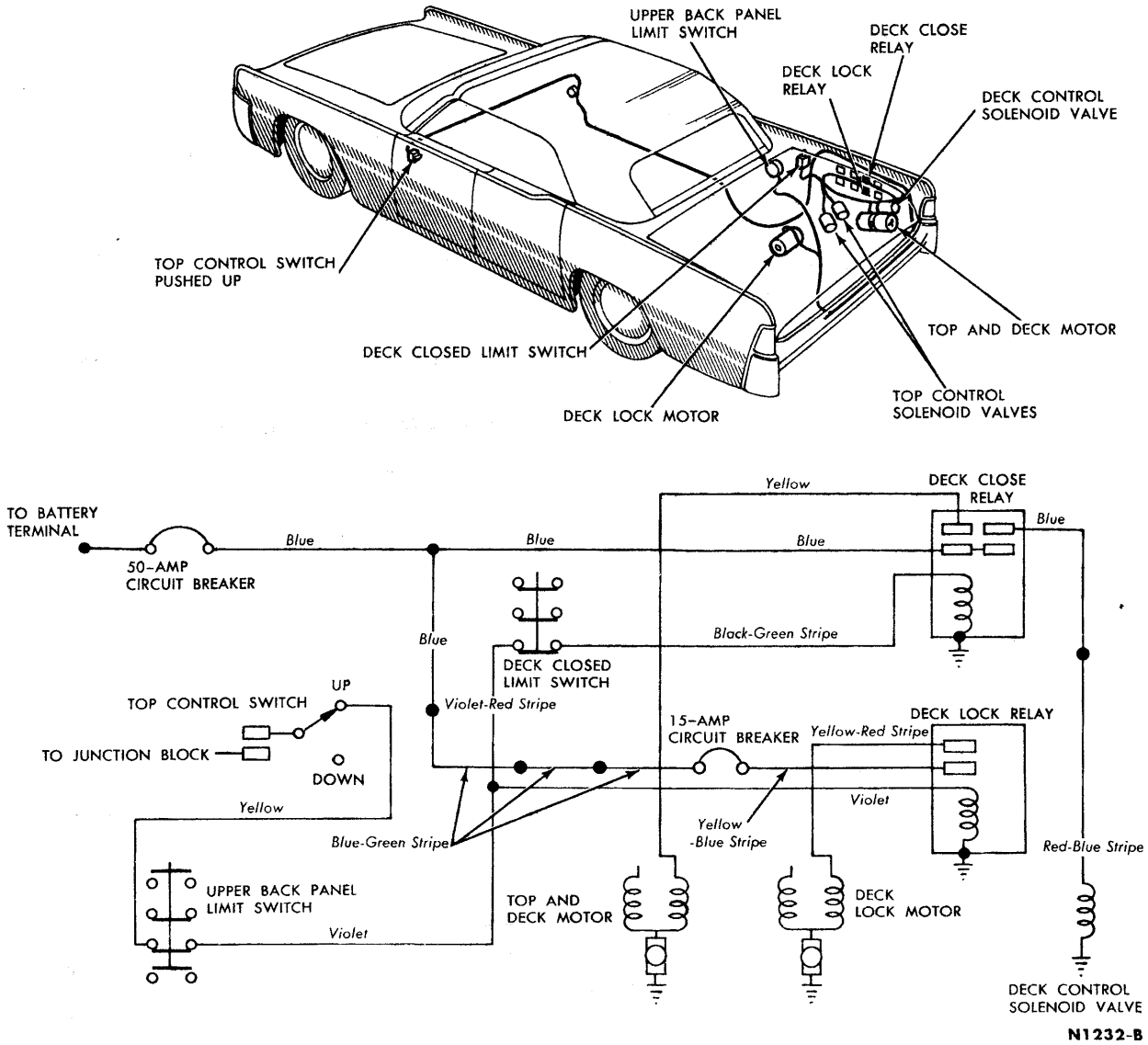


FIG. 15—Deck Lid Close and Lock—Top Erect Cycle

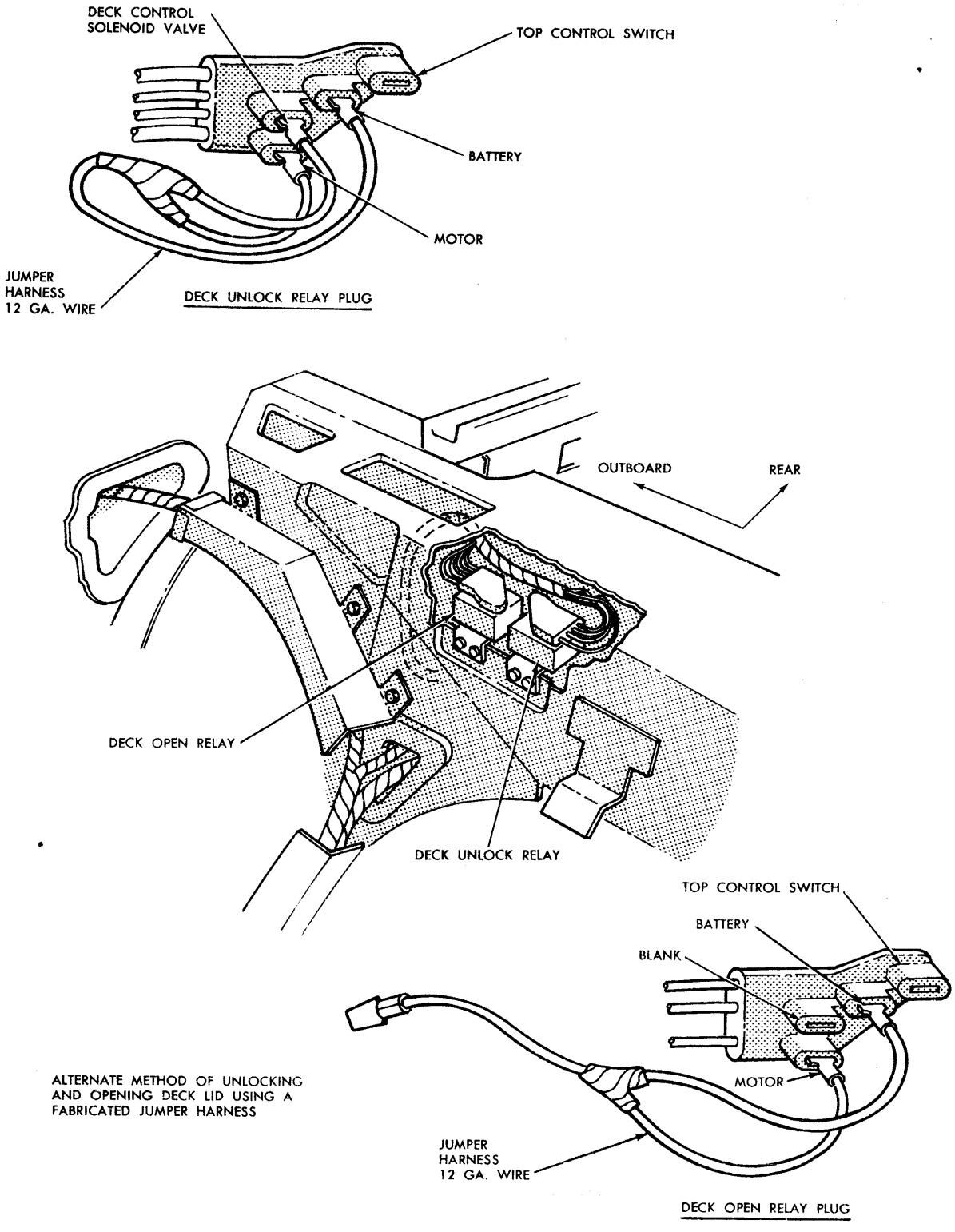


FIG. 16—Opening Deck Lid With Jumper Wire

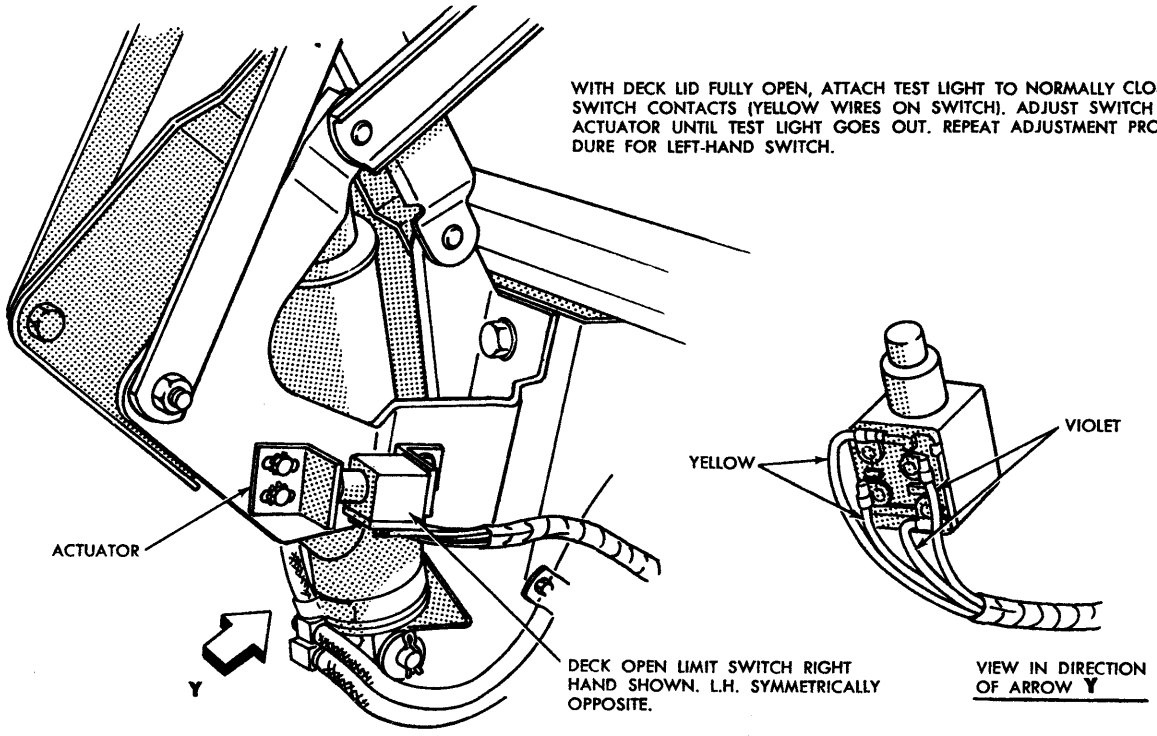


FIG. 17—Deck Open Limit Switches Adjustment

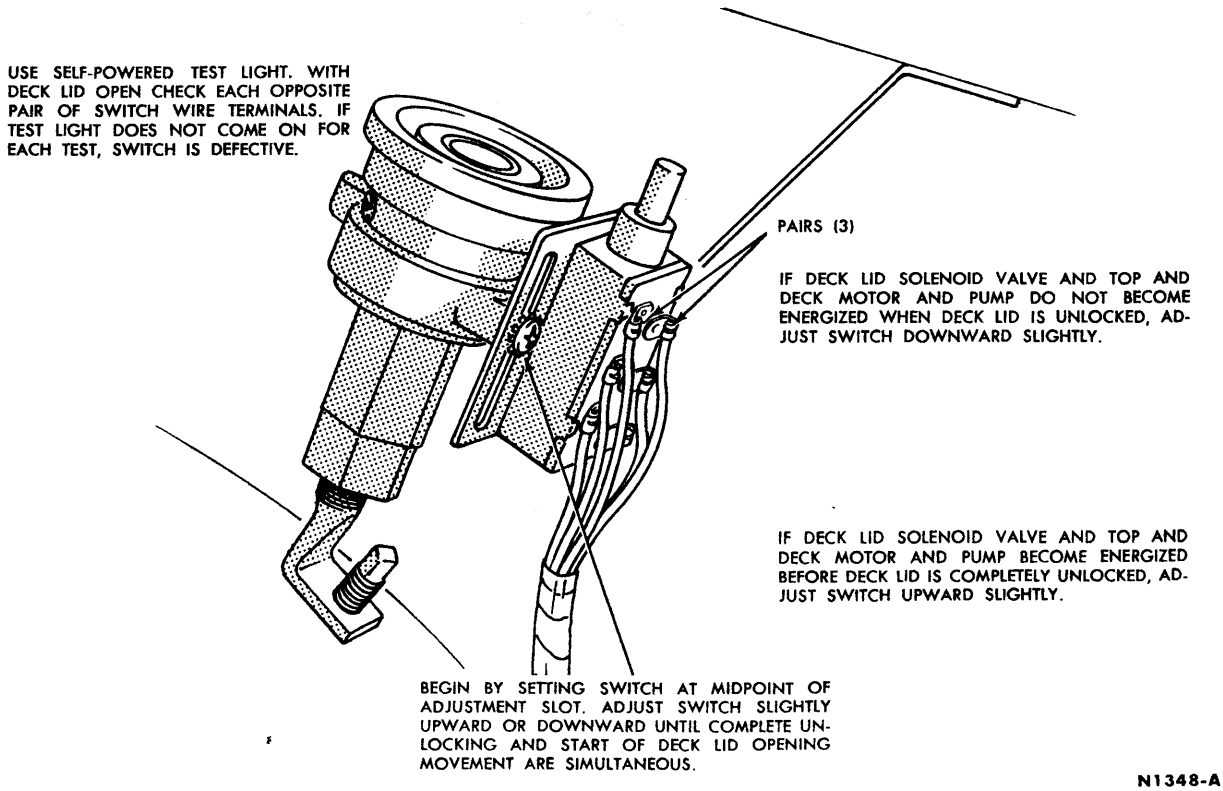


FIG. 18—Deck Close Limit Switch Adjustment

of the right rear quarter panel. Use the same equipment as in step 1. Also check the voltage supply at the service side of the three 15-ampere circuit breakers located in the same area.

5. The trouble shooting chart following assumes an adequate voltage supply, for system operation purposes, at the top control switch, bus bar, and through the 15-ampere circuit breakers.

6. When using a self-powered test light for checking the limit switches, disconnect the switch from the circuit.

TOP RETRACT CYCLE

All checks and tests detailed in the top retract cycle Trouble Diagnosis Guide are to be performed with the top control switch pressed down (retract position). In the event of a stop in the cycle, release the control switch to avoid burning out a motor. If jamming is suspected, do not reactivate control switch for over five seconds at one time until the condition is cleared.

TROUBLE DIAGNOSIS GUIDE — TOP RETRACT CYCLE — DECK LID UNLOCK (FIG. 4)

Malfunction	Probable Cause	Corrective Action
1 NO UNLOCKING ACTION—DECK UNLOCK RELAY NOT FUNCTIONING (NO AUDIBLE CLICK).	(a) Deck unlock relay defective.	(a) Move top control switch to up (erect) position; listen for ratcheting of deck lid locks. Move top control switch to down position intermittently and listen for click of deck unlock relay (behind rear seat back cushion). If no click, remove cushion and check for voltage at orange-brown wire terminal. If terminal is hot, relay is defective. Replace deck unlock relay.
	(b) No voltage at relay orange-brown terminal.	(b) Bypass relay by means of a jumper from relay terminals as shown in Fig. 16 to activate deck lock motor.

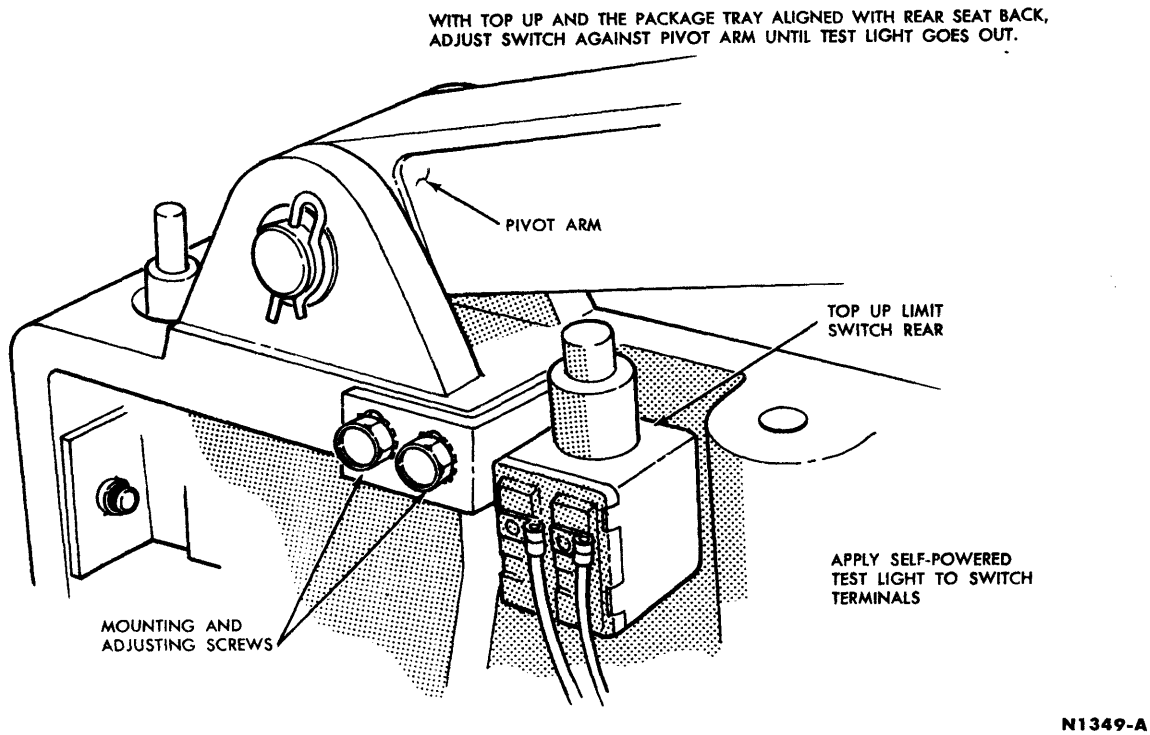


FIG. 19—Top Up Rear Limit Switch Adjustment

TROUBLE DIAGNOSIS GUIDES — TOP RETRACT CYCLE — DECK LID UNLOCK (FIG. 4) (Continued)

Malfunction	Probable Cause	Corrective Action
2 NO UNLOCKING ACTION—DECK UNLOCK RELAY FUNCTIONING (AUDIBLE CLICK).	(a) Maladjusted deck closed limit switch.	(a) A maladjusted deck closed limit switch will allow the top-deck motor and pump to operate and apply pressure to the deck lift cylinders and cause lock screws to bind. Release top control switch and unlock deck lid as outlined in 1 (b). If this fails, deck lid will have to be unlocked mechanically. See 3 (a) in "Deck Lid Open." See Fig. 18 for deck closed limit switch adjustment.
	(b) Defective deck lock motor circuit or motor. **Circuit and motor are inaccessible until deck is open.**	(b) If jumper is not effective in activating deck lock motor, the deck lid will have to be unlocked

LOOSEN SWITCH RETAINING NUTS (A) AND SWITCH ADJUSTMENT SCREWS (B & C). OPERATE THE UPPER BACK PANEL TO THE DESIRED ERECT POSITION. ROTATE THE INNER ADJUSTING RING (D) UNTIL THE NORMALLY CLOSED SWITCH CONTACTS OPEN (CHECK WITH SELF-POWERED TEST LIGHT, GREY TO BLACK-BLUE WIRE TERMINALS) LIGHT GOES OUT. TIGHTEN ADJUSTING SCREW (B).

NOTE: RED TO BROWN-GREEN WIRE CONTACTS ARE CLOSED AT THIS POINT.

RETRACT UPPER BACK PANEL UNTIL RUBBER STOPS HAVE BEEN COMPRESSED 30 TO 60% OF NORMAL. ROTATE THE OUTER ADJUSTMENT RING (E) UNTIL TEST LIGHT APPLIED AT GREEN-WHITE TO RED-WHITE WIRE TERMINALS GOES OUT. CHECK ORANGE TO RED-GREEN WIRE TERMINALS FOR OPEN CONTACTS. TIGHTEN ADJUSTING SCREW (C).

NOTE: BLACK TO RED WIRE AND VIOLET TO YELLOW WIRE CONTACTS ARE CLOSED AT THIS POINT.

AFTER BOTH ADJUSTMENTS HAVE BEEN ACCOMPLISHED, TIGHTEN SWITCH RETAINING NUTS (A).

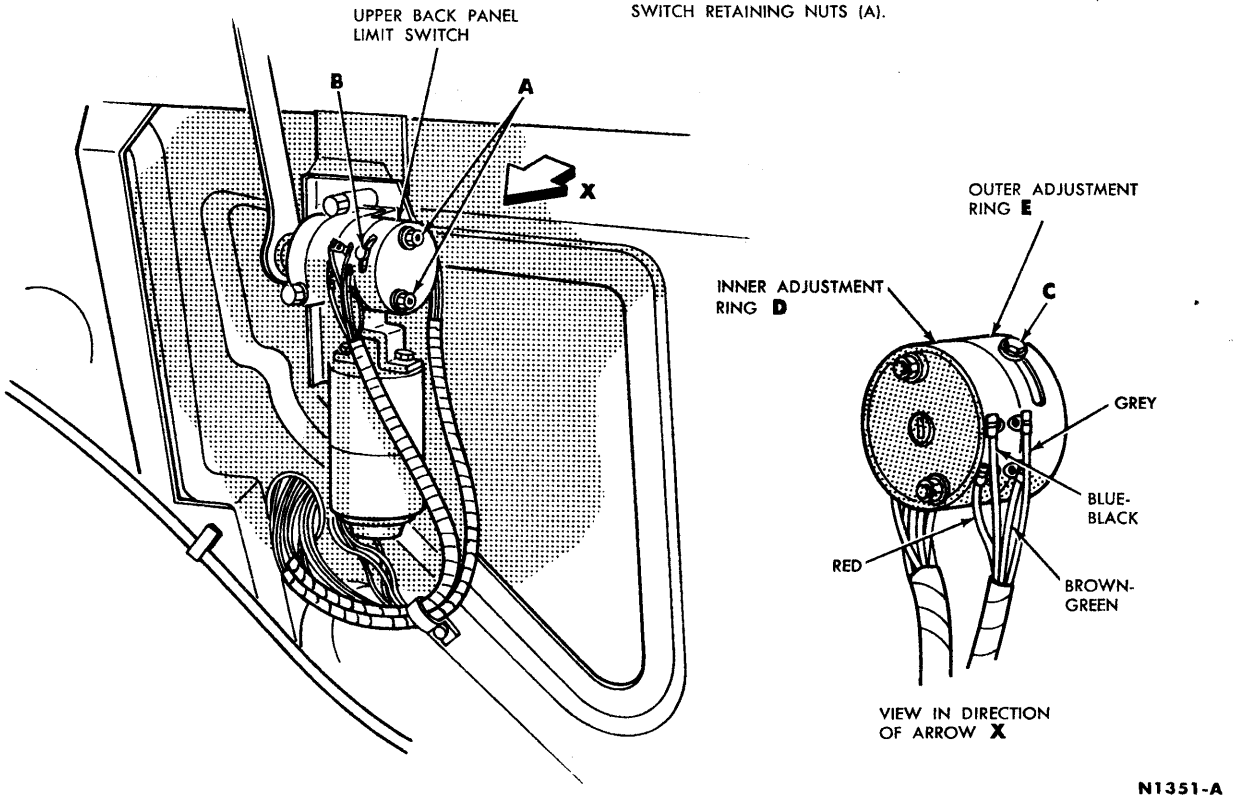
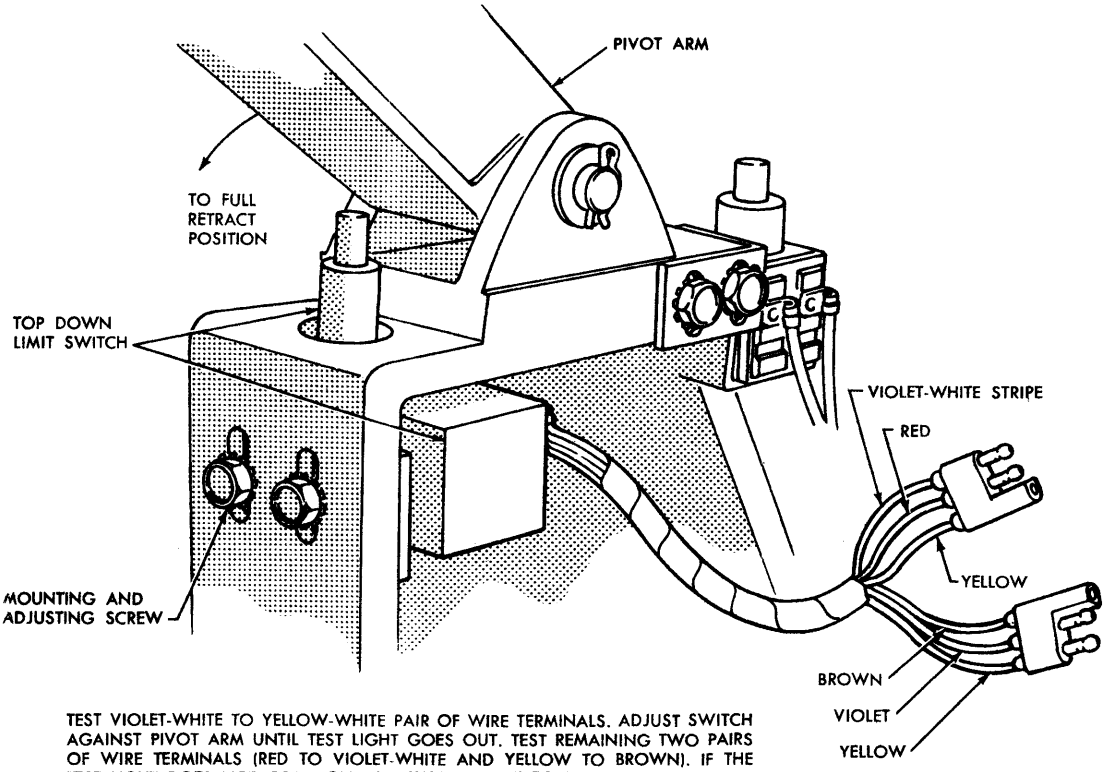


FIG. 20—Upper Back Panel Limit Switch Adjustment

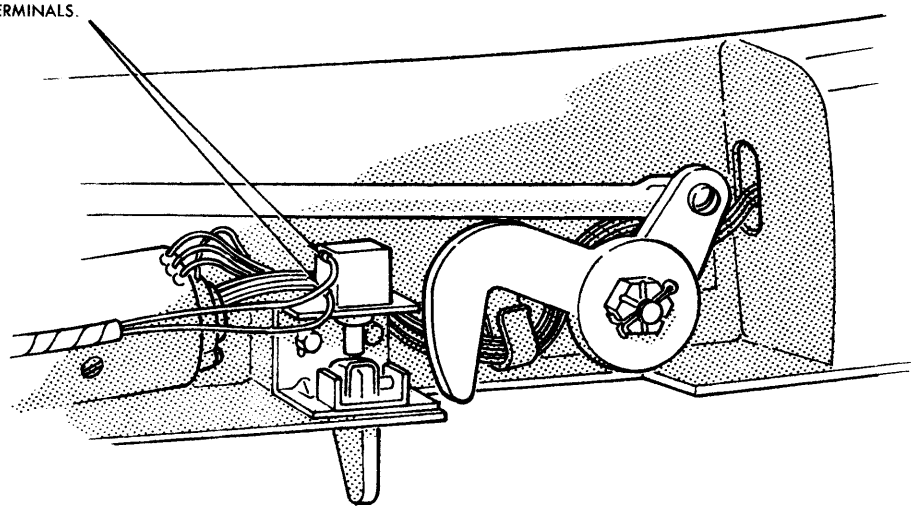


TEST VIOLET-WHITE TO YELLOW-WHITE PAIR OF WIRE TERMINALS. ADJUST SWITCH AGAINST PIVOT ARM UNTIL TEST LIGHT GOES OUT. TEST REMAINING TWO PAIRS OF WIRE TERMINALS (RED TO VIOLET-WHITE AND YELLOW TO BROWN). IF THE TEST LIGHT DOES NOT COME ON, THE SWITCH IS DEFECTIVE.

FIG. 21—Top Down Limit Switch Adjustment N1353-A

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.

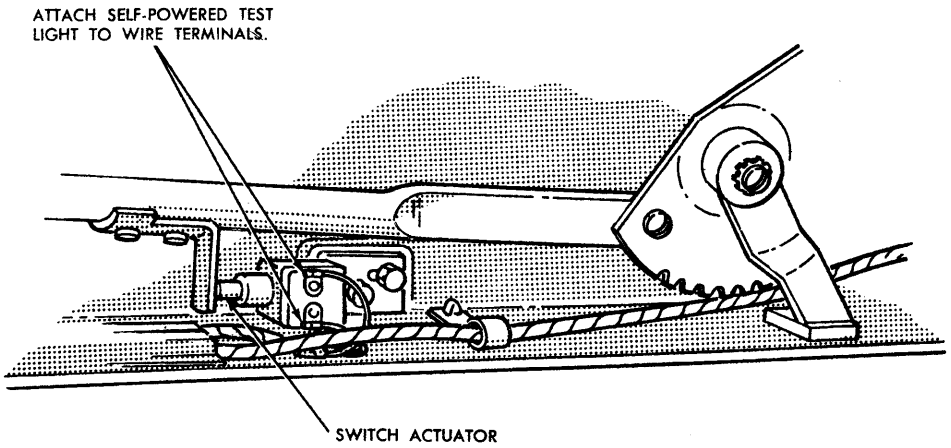
ATTACH SELF-POWERED TEST LIGHT TO WIRE TERMINALS.



N1354-A

FIG. 22—Top Up Front Limit Switch Adjustment

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.

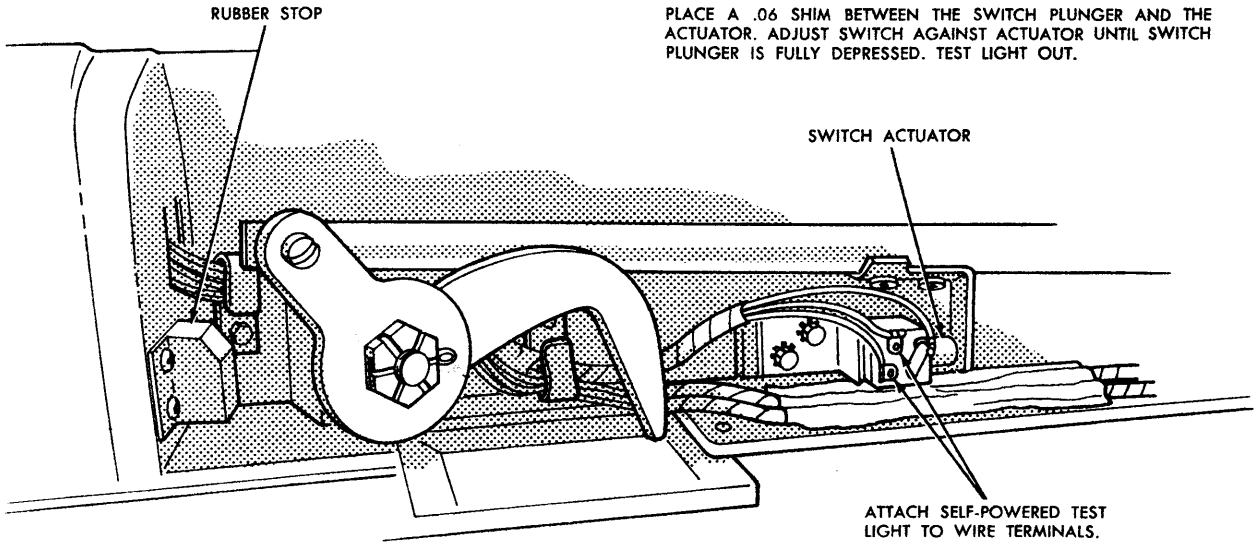


N1355-A

FIG. 23—Top Lock Limit Switch 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.



N1356-A

FIG. 24—Top Unlock Limit Switch Adjustment

TROUBLE DIAGNOSIS GUIDE — TOP RETRACT CYCLE — DECK LID UNLOCK (FIG. 4) (Continued)

Malfunction	Probable Cause	Corrective Action
2 NO UNLOCKING ACTION— DECK UNLOCK RELAY FUNCTIONING (AUDIBLE CLICK). (Continued)		mechanically to gain access to deck lock motor and complete circuit.
3 NO UNLOCKING ACTION— DECK LOCK MOTOR RUNNING	(a) Broken flexible shaft or loose lock nuts, one or both sides.	(a) Unlock deck lid mechanically.
4 UNLOCKING ACTION— DECK LID JUMPS OFF LOCKS	(a) Maladjusted deck closed limit switch allows top-deck motor and pump to operate early in phase and apply pressure to deck lid hydraulic cylinders before locks are clear.	(a) When deck lid has been opened, adjust deck closed limit switch. (Fig. 18.)

TROUBLE DIAGNOSIS GUIDE — TOP RETRACT CYCLE — DECK LID OPEN (FIG. 5)

1 NO DECK OPENING ACTION— DECK OPEN RELAY NOT FUNCTIONING	(a) Defective deck open relay (cycling stops as soon as deck lid locks clear).	(a) Check for voltage at yellow-violet wire terminal of deck open relay. If terminal is hot, relay is defective. Replace deck open relay. See Fig. 16.
	(b) Defective circuit. Top control switch through upper back panel limit switch, deck open limit switch L.H. and deck closed limit switch to yellow-violet wire terminal on deck open relay.	(b) If yellow-violet wire terminal of deck open relay is dead, use a jumper to bypass the deck open relay and activate the top and deck motor and pump the deck control solenoid to raise the deck lid. See Fig. 16. See also malfunction 3 (b), (c) and (d).
	(c) Defective upper back panel limit switch.	(c) With deck open for access, RELEASE TOP CONTROL SWITCH, using a self-powered test light check for open circuit between red wire terminal and black wire terminal of the eight-terminal group. If light does not come on, the switch should be adjusted before deciding it is defective. Replace defective upper back panel limit switch. At this time check violet to yellow wire terminals of the eight-terminal group and grey to black-blue wire terminal of four-terminal group.
	(d) Defective deck open limit switch L.H. **Deck lid must not be fully open to avoid repositioning of switch terminals.**	(d) TOP CONTROL SWITCH RELEASED. Using a self-powered test light, check for open circuit between yellow wire terminals of switch. If test light fails to come on, switch is defective. Also check yellow wire terminals of deck open limit switch R.H. Replace deck open limit switch(es) found defective.

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TROUBLE DIAGNOSIS GUIDE — TOP RETRACT CYCLE — DECK LID OPEN (FIG. 5) (Continued)

Malfunction	Probable Cause	Corrective Action
1 NO DECK OPENING ACTION—DECK OPEN RELAY NOT FUNCTIONING (Continued).	(e) Defective deck closed limit switch. **Deck lid open for access.**	(e) TOP CONTROL SWITCH RELEASED. Using a self-powered test light, check for open circuit between yellow wires, red wires, and white wires of switch. If test light fails to come on for any check, switch is defective. Replace deck closed limit switch.
2 NO DECK OPENING ACTION—DECK OPEN, RELAY NOT FUNCTIONING. DECK BUMPS UP AND DOWN ON LOCKS	(a) Maladjusted deck closed limit switch.	(a) Raise the deck lid manually until deck motor and pump become energized. After deck lid is open, adjust deck closed limit switch. See Fig. 18.
3 NO DECK OPENING ACTION—FUNCTIONING DECK OPEN RELAY	(a) Defective power circuit to top-deck motor and pump or deck control solenoid.	(a) A defective power circuit or defective motor or solenoid will prevent deck opening regardless of relay function and will be evident when relay jumper is applied. See 1 (b). Deck lid must be opened mechanically to gain access for repairs.
	(b) Defective deck lock motor circuit or motor.	(b) TOP CONTROL SWITCH RELEASED. If deck lock motor is not functioning, check power circuit for voltage at motor red-yellow wire terminal. Deck lid should be open, sufficient for access, only to avoid repositioning of deck open limit switch L.H. If no voltage, repair the circuit. If terminal is hot, motor is defective. Replace deck lock motor.
	(c) Broken deck lock flexible shaft(s).	(c) TOP CONTROL SWITCH RELEASED. Unlock deck lid mechanically. With deck lid open check deck lid lock shafts and lock nuts. If shaft(s) are broken, replace shafts. Otherwise, tighten lock nuts.
	(d) Faulty deck control solenoid valve or top-deck motor and pump assembly power circuits.	(d) Open deck lid mechanically. Check solenoid and motor circuits. Repair faulty circuit (Fig. 5).
	(e) Faulty deck control solenoid valve.	(e) TOP CONTROL SWITCH RELEASED. Open deck lid mechanically, sufficient for access. If circuit checks out hot at blue-red terminal on valve and the top-deck motor and pump operates when top control switch is momentarily depressed, but there is no action at deck opening cylinders, the solenoid valve is defective. Replace valve.

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TROUBLE DIAGNOSIS GUIDE—TOP RETRACT CYCLE—DECK LID OPEN (FIG. 5) (Continued)

Malfunction	Probable Cause	Corrective Action
3 NO DECK OPENING ACTION—FUNCTIONING DECK OPEN RELAY (Continued).	(f) Faulty top-deck motor and pump assembly.	(f) TOP CONTROL SWITCH RELEASED. Open deck lid mechanically, sufficient for access. If circuit checks hot at red wire terminal of motor and pump assembly, and motor does not operate when top control switch is momentarily depressed, motor is defective. Replace top-deck motor and pump assembly.

TROUBLE DIAGNOSIS GUIDE—TOP RETRACT CYCLE—UPPER BACK PANEL ERECT (FIG. 6)

1 DECK OPEN—NO UPPER BACK PANEL ACTION—UPPER BACK PANEL ERECT RELAY NOT FUNCTIONING (NO AUDIBLE CLICK)	(a) Defective upper back panel erect relay.	(a) Depress top control switch intermittently while listening for click. If no click, check for voltage at black-blue wire terminal on relay. If terminal is hot, relay is defective. Replace upper back panel relay.
	(b) Defective deck open limit switch L.H. to upper back panel erect relay circuit.	(b) Check out circuit from black-blue terminal on upper back panel erect relay connector, through upper back panel limit switch, to violet wire terminal on deck open limit switch L.H. repair circuit. See 1 (d).
	(c) Defective deck open limit switch L.H.	(c) Loosen switch actuator, press switch plunger all the way in and check between violet wire terminals on switch with self-powered test light. If light does not come on, switch is defective. Also check violet wire terminal(s) of deck open limit switch L.H. Replace defective deck open limit switch(es).
	(d) Defective upper back panel limit switch. **If defective circuits are found at this switch after switch terminals have been repositioned by erection of upper back panel, check red-green to orange and red-white to green-white wire terminals of 8-terminal group and red to brown-green wire terminals of 4-terminal group.**	(d) If circuit check performed in 1 (b) showed open circuit at black-blue to grey terminals of upper back panel limit switch, adjust the four-terminal section of switch. If adjustment does not close circuit, switch is defective. Replace upper back panel limit switch.
	(e) Defective power circuit to upper back panel erect relay.	(e) Check between ground and blue-white wire terminal on upper back panel motor. If terminal is dead, circuit is open. Repair circuit.

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TROUBLE DIAGNOSIS GUIDE—TOP RETRACT CYCLE—TOP UNLOCK (FIG. 7)

Malfunction	Probable Cause	Corrective Action
1 UPPER BACK PANEL ERECT—NO TOP UNLOCK ACTION. TOP UNLOCK RELAY NOT FUNCTIONING (NO AUDIBLE CLICK)	(a) Faulty top unlock relay.	(a) Depress top control switch intermittently and listen for relay click. If no click, bypass relay with jumper. If top lock motor is activated, check for voltage at red wire terminal on relay. If terminal is hot, relay is defective. Replace top unlock relay. If red wire terminal is dead, proceed as in 1 (b), (c), and (e). If top lock motor is not activated by jumping the relay connector, proceed as in 1 (d) in "Top Retract."
	(b) Defective top unlock limit switch to top unlock relay circuit.	(b) Check out circuit from red wire terminal on top unlock relay, through upper back panel limit switch, to brown-green wire terminal on top unlock limit switch. Repair circuit. See 1 (d) in "Top Retract."
	(c) Defective top unlock limit switch.	(c) Check between yellow wire terminal and brown wire terminal on top unlock limit switch with self-powered test light. Manually reposition switch and check yellow to white wire terminals. If light fails to come on either way, switch is defective. Replace top unlock limit switch.
	(d) Defective power circuit to top unlock motor.	(d) Check between ground and black-yellow wire terminal on motor. If terminal is dead, circuit is open. Repair circuit.
	(e) Defective upper back panel limit switch. **If defective circuits are found at this switch after switch terminals have been repositioned by erection of upper back panel, check switch adjustments before switch is considered defective.**	(e) If circuit chcek performed in 1 (b) showed open circuit at red to brown-green terminals of upper back panel limit switch, adjust the four-terminal section of the switch. If adjustment does not close the circuit, the switch is defective. Replace upper back panel limit switch.
	(f) Defective top lock motor.	(f) If yellow-black terminal wire is hot at motor case, motor is defective. Replace top lock motor.

TROUBLE DIAGNOSIS GUIDE—TOP RETRACT CYCLE—TOP RETRACT (FIG. 8)

1 TOP RETRACT—NO TOP ACTION—TOP DOWN RELAY NOT FUNCTIONING. (NO AUDIBLE CLICK)	(a) Defective top down relay.	(a) Depress top control switch intermittently and listen for relay click. If no click, bypass relay with jumper to activate top-deck motor and pump. Check for current at yellow-white wire terminal on relay. If terminal is hot, relay is defective. Replace

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TROUBLE DIAGNOSIS GUIDE – TOP RETRACT CYCLE – TOP RETRACT (FIG. 8) (Continued)

Malfunction	Probable Cause	Corrective Action
1 TOP RETRACT–NO TOP ACTION–TOP DOWN RELAY NOT FUNCTIONING. (NO AUDIBLE CLICK) (Continued)	(a) Continued	top down relay. If yellow-white wire terminal is dead, proceed as in 2 (b), (c), and (d).
	(b) Defective top unlock limit switch to top down relay circuit.	(b) Check circuit from yellow-white wire terminal on top down relay, through top down limit switch to white wire terminal on top unlock limit switch. Repair circuit. See 2 (c) and (d).
	(c) Defective top unlock limit switch. See top unlock phase.	(c) Check switch adjustment with the top unlock switch fully depressed. Check between white wire terminal and yellow wire terminal on top unlock switch with self-powered light. If light fails to come on, switch is defective. Replace top unlock limit switch.
	(d) Defective top down limit switch.	(d) Check between yellow - white wire terminal and violet-white wire terminal on top down limit switch with self-powered test lamp. If lamp fails to come on, switch is defective. Replace top down limit switch.
2 NO TOP RETRACT ACTION–TOP DOWN RELAY FUNCTIONING (AUDIBLE CLICK). TOP-DECK MOTOR AND PUMP ASSEMBLY OPERATING	(a) Defective top control solenoid valves.	(a) Check for voltage at the white-blue wire at the top control solenoid valves. If wire is hot, solenoid valve is defective. If wire is dead, check power circuit and repair.
3 NO TOP RETRACT ACION–TOP DOWN RELAY FUNCTIONING (AUDIBLE CLICK). TOP-DECK MOTOR AND PUMP ASSEMBLY NOT OPERATING	(a) Defective top-deck motor and pump assembly or power circuit.	(a) Check voltage at the yellow wire at top motor and pump assembly. If wire is hot, motor is defective. If wire is dead, check power circuit and repair.

TROUBLE DIAGNOSIS GUIDE – TOP RETRACT CYCLE – DECK LID CLOSE AND LOCK (FIG. 9)

1 NO DECK CLOSE ACTION–DECK CLOSE RELAY NOT FUNCTIONING	(a) Defective deck close relay.	(a) Check for voltage at black-green wire terminal on relay. If terminal is hot, relay is defective. Replace deck close relay. If black-green wire terminal is dead, proceed as in malfunction 1 (b) below.
	(b) Defective deck close relay to top down limit switch circuit.	(b) Check out circuit from black-green wire terminal on deck close relay through deck closed limit switch to violet-white wire terminal on top down limit switch. Repair circuit. See malfunction 2 (c) on following page.

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TROUBLE DIAGNOSIS GUIDE—TOP RETRACT CYCLE—DECK LID CLOSE AND LOCK (FIG. 9) (Continued)

Malfunction	Probable Cause	Corrective Action
1 NO DECK CLOSE ACTION—DECK CLOSE RELAY NOT FUNCTIONING (Continued)	(c) Defective top down limit switch. See top retracting phase.	(c) Check between violet-white wire terminal and red wire terminal on top down limit switch with self-powered test light. If light fails to come on, switch is defective. Replace top down limit switch.
	(d) Defective deck closed limit switch.	(d) Check between red wire terminals on deck closed limit switch with self-powered test light. If light fails to come on, switch is defective. Replace deck closed limit switch.
2 NO DECK CLOSE ACTION—DECK CLOSE RELAY FUNCTIONING—TOP AND DECK MOTOR AND PUMP ASSEMBLY IS OPERATING	(a) Defective deck control solenoid valve.	(a) Check for voltage at deck control solenoid valve lead. If wire is hot, solenoid valve is defective. If wire is dead check power circuit and repair.
3 NO DECK CLOSE ACTION—DECK CLOSE RELAY FUNCTIONING. TOP-DECK MOTOR AND PUMP NOT OPERATING	(a) Defective top-deck motor and pump assembly or power circuit.	(a) Check voltage at the yellow wire at top-deck motor and pump assembly. If wire is hot, motor is defective. If wire is dead, check power circuit and repair.
4 NO DECK LOCK ACTION DECK LOCK MECHANISM NOT FUNCTIONING WHEN DECK LID STARTS TO CLOSE	(a) Defective deck lock relay. **Deck lock relay is activated simultaneously with deck close relay.**	(a) Check for voltage at the violet-red wire terminal of relay. If wire is hot, deck lock relay is defective. If wire terminal is dead, check for break in violet-red wire to violet-white wire circuit to the deck closed limit switch. Repair circuit.
5 NO DECK LOCK ACTION DECK LOCK RELAY FUNCTIONING	(a) Open power circuit to deck lock motor or defective deck lock motor.	(a) When deck lid starts to close, observe deck lock mechanism. If deck lock mechanism is not functioning disconnect the motor leads at the motor. Use a jumper between motor yellow-red lead and yellow-blue wire receptacle of deck lock relay connector. If motor operates, power circuit (yellow wire) is open. Repair circuit. If motor does not operate, motor is defective. Replace deck lock motor. Release top control switch.

TOP ERECT CYCLE

The top erect cycle utilizes the same motors as the top retract cycle. These motors, however, operate in the reverse direction of that for the retract cycle in the upper back panel retract, top erect, and top lock phases. The circuits, switches, and/or switch positions differ in the various phases. **All checks and tests detailed in the Top Erect Cycle Diagnosis Guide are to be performed with the top control switch pushed up (erect position).**

In the event of a stop in the cycle, release the control switch to avoid burning out a motor. If jamming is suspected, do not reactivate the control switch for over five seconds at one time until the condition is cleared.

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TROUBLE DIAGNOSIS GUIDE — TOP ERECT CYCLE — DECK LID UNLOCK (FIG. 10)

Malfunction	Probable Cause	Corrective Action
1 NO UNLOCKING ACTION—DECK UNLOCK RELAY NOT FUNCTIONING (NO AUDIBLE CLICK)	(a) Deck unlock relay defective.	**(a)** Move top control switch to down (retract) position. Listen for ratcheting of deck lid locks. Move top control switch to up (erect) position intermittently and listen for click of deck unlock relay (behind rear seat back cushion). If no click, remove cushion and check for voltage at orange-brown wire terminal. If terminal is hot, relay is defective. Replace deck unload relay.
	(b) No voltage at relay orange-brown terminal. Also see 1 (b) "Deck Lid Open."	**(b)** Bypass deck unlock relay by means of a jumper at connector terminals, as shown in Fig. 10, to activate deck lock motor.
2 NO UNLOCKING ACTION—DECK UNLOCK RELAY FUNCTIONING (AUDIBLE CLICK)	(a) Maladjusted deck closed limit switch.	**(a)** A maladjusted deck closed limit switch will allow the top-deck motor and pump to operate and apply pressure to the deck lift cylinders and cause lock screws to bind. Release top control switch and unlock deck lid as outlined in 1 (b). If this fails, deck lid will have to be unlocked mechanically. See 3 (a), "Deck Lid Open." See Fig. 18 for deck closed limit switch adjustment.
	(b) Defective deck lock motor circuit **or motor. Circuit and motor are inaccessible until deck is open.**	**(b)** If jumper is not effective in activating deck lock motor, the deck lid will have to be unlocked mechanically to gain access to deck lock motor and complete circuit. See 2 (a), "Deck Lid Open."
3 NO UNLOCKING ACTION—DECK LOCK MOTOR RUNNING	(a) Broken flexible shaft or loose lock nuts, one or both sides.	**(a)** Unlock deck lid mechanically.
4 UNLOCKING ACTION—DECK LID JUMPS OFF LOCKS	(a) Maladjusted deck closed limit switch allows top-deck motor and pump to operate early in phase and apply pressure to deck lid hydraulic cylinders before locks are clear.	**(a)** When deck lid has been opened, adjust deck closed limit switch. See Fig. 18.

TROUBLE DIAGNOSIS GUIDE — TOP ERECT CYCLE — DECK LID OPEN (FIG. 11)

1 NO DECK OPENING ACTION—DECK OPEN RELAY NOT FUNCTIONING	(a) Defective deck open relay (cycling stops as soon as deck lid locks clear).	**(a)** Check for voltage at yellow-violet wire terminal of deck open relay. If terminal is hot, relay is defective. Replace deck open relay. See Fig. 16.

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TROUBLE DIAGNOSIS GUIDE — TOP ERECT CYCLE — DECK LID OPEN (FIG. 11) (Continued)

Malfunction	Probable Cause	Corrective Action
1 NO DECK OPENING ACTION—DECK OPEN RELAY NOT FUNCTIONING (Continued)	**(b)** Defective circuit. Top control switch through the top down limit switch, the deck open limit switch R.H., and the deck closed limit switch to the yellow-violet wire terminal on the deck open relay (Fig. 11).	**(b)** If yellow-violet wire terminal of deck open relay is dead, use a jumper to bypass the deck open relay and activate the top-deck motor and pump and deck control solenoid to raise the deck lid (Fig. 16). See in "Deck Lid Unlock." 4 (b), (c) and (d).
	(c) Defect in top down limit switch.	**(c)** With deck lid open for access only, use a self-powered test lamp to check brown to yellow wire terminals of top down limit switch. Light should come on. Also check red to violet-white pair of wire terminals. Light should come on. If light does not come on in either case, switch is defective. Replace top down limit switch.
	(d) Defective deck open limit switch R.H. **Deck lid must not be fully open to avoid repositioning of switch terminals.**	**(d)** TOP CONTROL SWITCH RELEASED. Using a self-powered test light, check for open circuit between yellow wire terminals of switch. If test light fails to come on, switch is defective. Also check yellow wire terminals of deck open limit switch R.H. (Replace deck open limit switch (es) found defective.
	(e) Defective deck closed limit switch. **Deck lid open for access.**	**(e)** TOP CONTROL SWITCH RELEASED. Using a self-powered test light, check for open circuit between yellow wires, red wires, and white wires of switch. If test fails to come on for any check, switch is defective. Replace deck closed limit switch.
2 NO DECK OPENING ACTION—DECK OPEN RELAY NOT FUNCTIONING. DECK BUMPS UP AND DOWN ON LOCKS	**(a)** Maladjusted deck closed limit switch.	**(a)** Raise deck lid manually until deck motor and pump become energized. After deck lid is open, adjust deck closed limit switch (Fig. 18).
3 NO DECK OPENING ACTION—DECK OPEN RELAY FUNCTIONING	**(a)** Defective power circuit to top-deck motor and pump or deck control solenoid.	**(a)** A defective power circuit or defective motor or solenoid will prevent deck opening regardless of relay function and will be evident when relay jumper is applied. See 1 (b), "Deck Lid Open—Top Retract Cycle." Deck lid must be opened mechanically to gain access for repairs.
	(b) Defective deck lock motor circuit or motor.	**(b)** TOP CONTROL SWITCH RELEASED. If deck lock motor is not functioning, check power circuit for voltage at motor red-yellow wire terminal. Deck lid should be open sufficient for

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TROUBLE DIAGNOSIS GUIDE – TOP ERECT CYCLE – DECK LID OPEN (FIG. 11) (Continued)

Malfunction	Probable Cause	Corrective Action
	(b) Continued	access only to avoid repositioning of deck open limit switch L.H. If no voltage, repair the circuit. See 1 (b). If terminal is hot, motor is defective. Replace deck lock motor.
	(c) Broken deck lock flexible shaft(s).	(c) TOP CONTROL SWITCH RELEASED. With deck lid open check deck lid lock shafts and lock nuts. If shaft(s) are broken, replace shafts. Otherwise tighten lock nuts.
	(d) Faulty deck control solenoid valve or top-deck motor and pump assembly power circuits.	(d) Open deck lid mechanically. Check solenoid and motor circuits. Repair faulty circuit (Fig. 5).
3 NO DECK OPENING ACTION—DECK OPEN RELAY FUNCTIONING (Continued)	(e) Faulty deck control solenoid valve.	(e) TOP CONTROL SWITCH RELEASED. Open deck lid mechanically, sufficient for access. If circuit checks out hot at blue-red terminal on valve and the top-deck motor and pump operate when top control switch is momentarily pushed up, but there is no action at deck opening cylinders, the solenoid valve is defective. Replace valve.
	(f) Faulty top deck motor and pump assembly.	(f) TOP CONTROL SWITCH RELEASED. Open deck lid mechanically, sufficient for access. If circuit checks hot at red wire terminal of motor and pump assembly and motor does not operate when top control switch is momentarily pushed up, motor is defective. Replace top-deck motor and pump assembly.
4 NO TOP ERECTING ACTION—TOP UP RELAY NOT FUNCTIONING (NO AUDIBLE CLICK)	(a) Defective top up relay.	(a) Push top control switch up intermittently while listening for click of relay. If no click, check for voltage at green wire terminal on relay. If terminal is hot, relay is defective. Replace top up relay. If green wire terminal is dead proceed as in 4 (b).
	(b) Defective circuit from top control switch, through top up limit switch rear, deck open limit switch R.H. to top up relay.	(b) TOP CONTROL SWITCH RELEASED. Check out circuit and switches using a self-powered test light (Fig. 12). See 4 (c) and (d).
	(c) Defective top up limit switch.	(c) TOP CONTROL SWITCH RELEASED. Check between terminals of switch. If light fails to come on, switch is defective. Replace top up limit switch.

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TROUBLE DIAGNOSIS GUIDE – TOP ERECT CYCLE – DECK LID OPEN (FIG. 11) (Continued)

Malfunction	Probable Cause	Corrective Action
4 NO TOP ERECTING ACTION–TOP UP RELAY NOT FUNCTIONING (NO AUDIBLE CLICK) (Continued)	(d) Defective deck open limit switch R.H.	(d) TOP CONTROL SWITCH RELEASED. Check between violet wire terminals of switch. If light fails to come on, switch is defective. Replace deck open limit switch. See 1 (c), "Upper Back Panel Erect–Top Retract Cycle."
5 NO TOP ERECT ACTION–TOP UP RELAY FUNCTIONING	(a) Defective top and deck motor and pump assembly.	(a) Disconnect the 2-wire connector on motor leads. Jumper from each motor lead in turn to bus bar on relay panel. If motor is not activated, it is defective. Replace top-deck motor and pump assembly.
	(b) Defective top-deck motor power circuit.	(b) If motor will operate, connect leads disconnected in 5 (a) above and push top control switch up. If motor still does not operate, the motor power circuit is defective. Repair defective circuit (red wire) or (yellow wire).
	(c) Defective top control solenoid valves power circuits.	(c) Disconnect solenoid valve leads, and with ordinary test lamp, check for voltage from lead terminal to ground. If either or both leads are defective, check and repair wire circuit (Fig. 13).
	(d) Defective top control solenoid valves.	(d) If solenoid power lead(s) is hot, solenoid valve(s) is defective. Replace top control solenoid valve.

TROUBLE DIAGNOSIS GUIDE – TOP ERECT CYCLE – TOP LOCK (FIG. 13)

1 NO TOP LOCK ACTION–TOP LOCK RELAY NOT FUNCTIONING (NO AUDIBLE CLICK)	(a) Defective top lock relay.	(a) Push top control switch up intermittently, while listening for click. If no click, check for voltage at orange wire terminal of relay connector. If wire is hot, relay is defective. Replace top lock relay. If orange wire terminal is dead proceed as in 5 (b), "Deck Lid Open – Top Erect Cycle." The top lock relay may be bypassed and the top lock motor may be energized by a jumper wire from center receptacle to the black-red wire receptacle of top lock relay connector. See 1 (e).
	(b) Defective circuit from top control switch, through top up limit switch front, and upper back panel limit switch to top lock relay. **Remove top front bow cover to reach top lock motor and switches.**	(b) TOP CONTROL SWITCH RELEASED. Check out circuit wiring and switches using self-powered test light (Fig. 13). See 1 (c) and (d).

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TROUBLE DIAGNOSIS GUIDE—TOP ERECT CYCLE—TOP LOCK (FIG. 13) (Continued)

Malfunction	Probable Cause	Corrective Action
1 NO TOP LOCK ACTION—TOP LOCK RELAY NOT FUNCTIONING (NO AUDIBLE CLICK) (Continued)	(c) Defective top up limit switch front.	(c) Open top No. 1 bow cover. Check between wire terminals of switch. If light does not come on, switch is defective. Replace top up limit switch front.
	(d) Defective upper back panel limit switch.	(d) Check between red-green and orange wire terminals. If test light does not come on, switch is defective.
	(e) Defective top lock motors or circuit. See 5 (a), "Deck Lid Open—Top Erect Cycle."	(e) If top lock motor or circuit is found to be defective when relay is bypassed by jumper, check the motor circuit for voltage at the live side of the motor connector. If circuit is dead, repair circuit (black-red wire). If circuit is hot, motor is defective. Replace top lock motor.

TROUBLE DIAGNOSIS GUIDE—TOP ERECT CYCLE—UPPER BACK PANEL RETRACT (FIG. 14)

1 NO UPPER BACK PANEL RETRACT ACTION—RELAY NOT FUNCTIONING (NO AUDIBLE CLICK)	(a) Defective upper back panel retract relay.	(a) Push top control switch up intermittently while listening for relay click. If no click, check for voltage at the red-white wire receptacle of the relay connector. If circuit is hot, relay is defective. Replace upper back panel retract relay. If circuit is dead, proceed as in 1 (b).
	(b) Defective circuit from top control switch, through the top lock limit switch, and the upper back panel retract relay.	(b) TOP CONTROL SWITCH RELEASED. Check out circuit wiring and switches using self-powered test light (Fig. 14), see 1 (c) and (d).
	(c) Defective top lock limit switch.	(c) Open No. 1 top bow cover and apply test light between the terminals of switch. (The switch plunger should be fully depressed when top is locked). If light does not come on, switch is defective. Replace top lock limit switch.
	(d) Defective upper back panel limit switch.	(d) Using self-powered test light, check between the green-white and the red-white wire terminals of the switch. If light does not come on, make sure the switch is properly adjusted before deciding it is defective (Fig. 20).
	(e) Defective upper back panel motor or power circuit (Fig. 14).	(e) Disconnect motor leads at motor. Use a jumper between each motor lead and bus bar on relay panel. If motor does not operate, the motor is defective. Replace upper back panel motor. If motor operates, check the power circuits back to the relay and the 15-ampere circuit breaker.

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TROUBLE DIAGNOSIS GUIDE – TOP ERECT CYCLE – DECK LID CLOSE AND LOCK (FIG. 15)

Malfunction	Probable Cause	Corrective Action
1 NO DECK CLOSE ACTION—DECK CLOSE RELAY NOT FUNCTIONING	(a) Defective deck close relay.	(a) Check for voltage at black-green wire terminal on relay. If terminal is hot, relay is defective. Replace deck close relay. If black-green wire terminal is dead, proceed as in 1 (b).
	(b) Defective circuit from top control switch, through the upper back panel limit switch, and the deck closed limit switch to relay.	(b) TOP CONTROL SWITCH RELEASED. Check out circuit wiring and switches using self-powered test light (Fig. 15). See 1 (c) and (d).
	(c) Defective upper back panel limit switch.	(c) Check between violet and yellow wires of switch. If the light does not come on, switch is defective. Check switch adjustment before replacing switch.
	(d) Defective deck closed limit switch.	(d) Check between red wire terminals on deck closed limit switch with self-powered test light. If light fails to come on, switch is defective. Replace deck closed limit switch.
2 NO DECK CLOSE ACTION—DECK CLOSE RELAY FUNCTIONING. TOP-DECK MOTOR AND PUMP ASSEMBLY IS OPERATING	(a) Defective deck control solenoid valve.	(a) Check for voltage at deck control solenoid valve lead. If wire is hot, solenoid valve is defective. If wire is dead, check power circuit and repair.
3 NO DECK CLOSE ACTION—DECK CLOSE RELAY FUNCTIONING. TOP-DECK MOTOR AND PUMP NOT OPERATING	(a) Defective top-deck motor and pump assembly or power circuit.	(a) Check voltage at the yellow wire at top motor and pump assembly. If wire is hot, motor is defective. If wire is dead, check power circuit and repair.
4 NO DECK LOCK ACTION—DECK LOCK MECHANISM NOT FUNCTIONING WHEN DECK LID STARTS TO CLOSE	(a) Defective deck lock relay. **Deck lock relay is activated simultaneously with deck close relay.**	(a) If relay is not activated in the cycle, relay is defective.
5 NO DECK LOCK ACTION—DECK LOCK RELAY FUNCTIONING	(a) Open power circuit to deck lock motor or defective deck lock motor.	(a) When deck lid starts to close, observe deck lock mechanism. If deck lock mechanism is not functioning, disconnect the motor leads at the motor. Use a jumper between motor yellow-red lead and yellow-blue wire receptacle of deck lock relay connector. If motor operates, power circuit (yellow wire) is open. Repair circuit. If motor does not operate, motor is defective. Replace deck lock motor.

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