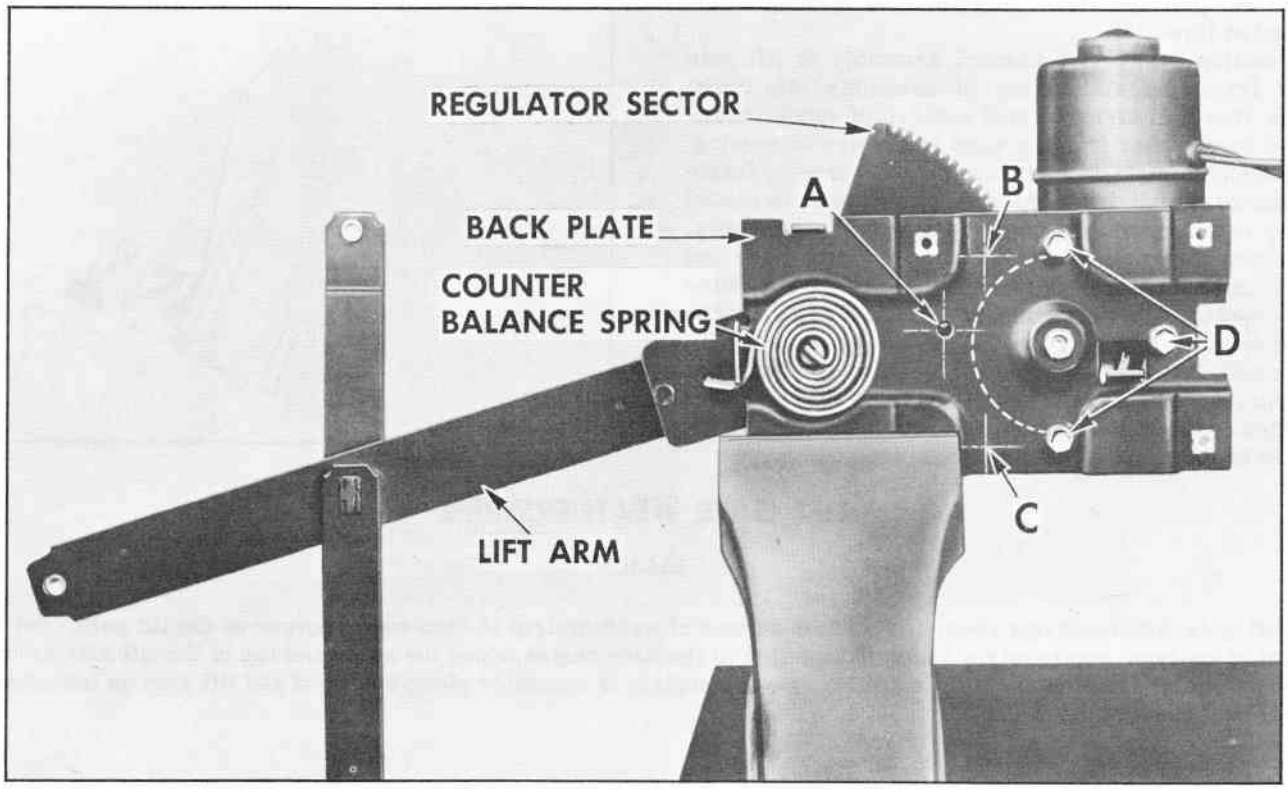
DOOR AND REAR QUARTER WINDOW ELECTRIC REGULATOR MOTOR

STATION WAGON STYLES EQUIPPED WITH ELECTRIC WINDOW REGULATORS

The electric motor assembly, which powers the window regulator on electrically-operated windows, is a twelve (12) volt reversible direction motor with a built-in circuit breaker and a self-locking gear drive. The motor is secured to the regulator assembly with three (3) screws.

The principle of operation of the electrically-powered window regulator is as follows:

When the motor is actuated, the motor pinion gear which is meshed with the rack portion of the regulator sector, rotates, providing the up and down movement of the regulator lift arm.



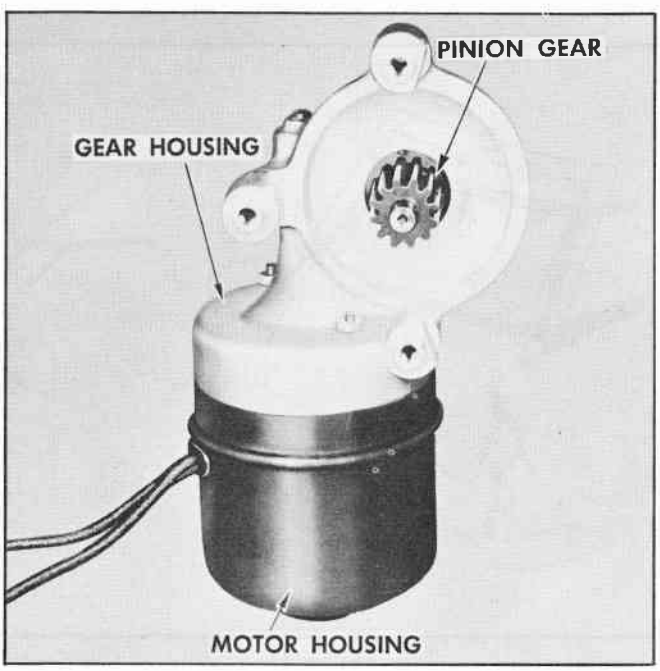
REMOVAL AND INSTALLATION

1. Remove electric window regulator assembly from door or rear quarter. See "Door Window Regulator" or "Rear Quarter Window Regulator."
2. Clamp electric window regulator securely in vise, as shown in above illustration. Door window regulator illustrated.

NOTE: The position of the regulator assembly clamped in the vise will vary with the type of regulator and position of the lift arm.

CAUTION: BE SURE TO PERFORM STEPS 3 & 4 BEFORE ATTEMPTING TO REMOVE THE MOTOR FROM THE REGULATOR. The regulator lift arm, which is under tension from the counter-balance spring, can cause serious injury if the motor assembly is removed without locking the sector in position with a nut and bolt.

The illustration shows the motor removed from the regulator assembly.



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3. Drill 1/4'' hole through back plate and sector at location indicated at A, or B, or C, depending on position of lift arm.
NOTE: Do not drill into motor housing, part of which is indicated by dotted line. In addition, locate hole not less than 3/4'' away from edge of back plate or sector. See illustration on previous page.
4. Insert 3/16'' bolt through holes in back plate and sector, and install nut to bolt. Do not tighten nut.
5. Remove three (3) attaching bolts ''D'', and remove motor.
NOTE: Clean off steel chips from the regulator sector and pinion gear.
6. To install, reverse removal procedure. If difficulty is encountered when trying to line up motor attaching holes, the regulator lift arm may be moved up or down manually, so that motor pinion gear will mesh with teeth on regulator sector, and regulator attaching holes will line up.
NOTE: Be sure to remove temporary nut and bolt from regulator before installing it into the door or rear quarter.

TROUBLE SHOOTING PROCEDURES

STATION WAGON STYLES EQUIPPED WITH ELECTRIC WINDOWS

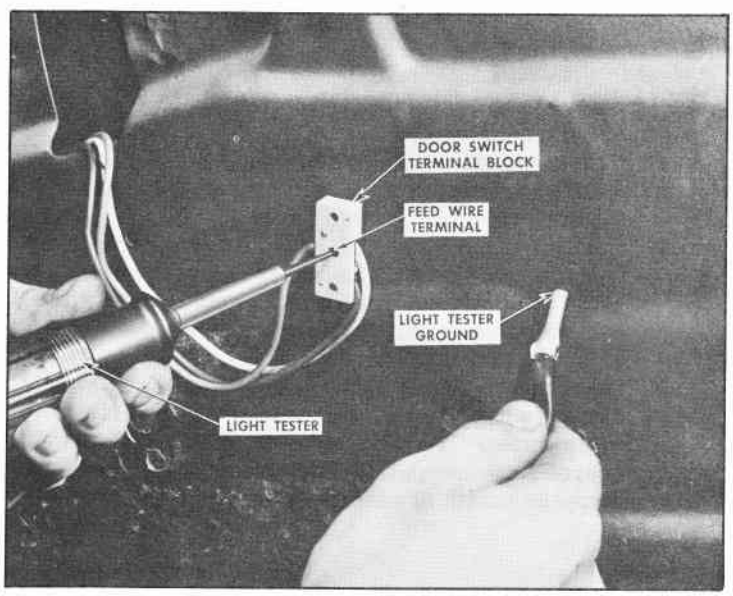
The electric window regulators are operated by a 12-volt, individual, reversible direction motors. Each motor has an internal circuit breaker to prevent overloading of the motor when it has completed a cycle of operation. Other components of the circuit are protected by a circuit breaker in the feed wire circuit.
When a switch is operated, current flows to one of two motor leads. When a door window switch is pushed upward the motor operates to raise the window. When a door window switch is pushed downward, the motor operates in a reversed direction to lower the window. The switch operation is similar on styles having electrically-powered rear quarter windows.

CHECKING PROCEDURES

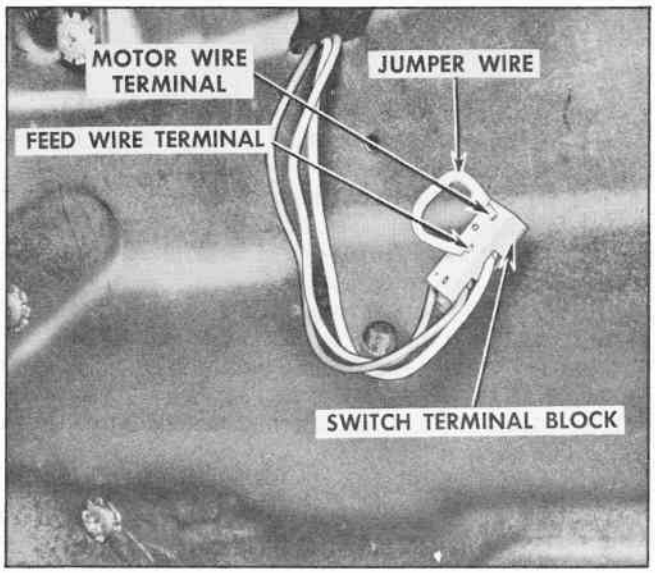
Failures in a circuit are usually caused by short circuits or open circuits. Open circuits are usually caused by breaks in the wiring, faulty connections, or mechanical failure in a component such as a switch or circuit breaker. Short circuits are usually caused by wires from different components of the circuit contacting one another or by a wire or component grounding to the metal of the body.

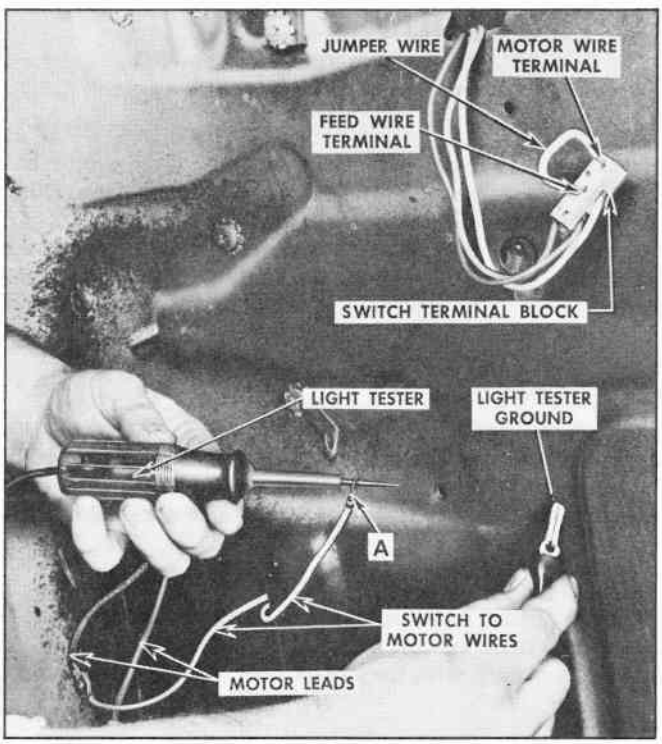
A light tester can be used for locating open circuits or short circuits. If the light tester indicates current at one terminal of a wire but does not indicate current at the other, there is an open circuit or a short circuit in the wire. To check for an open circuit or a short circuit between two terminals of a component, the component must first be actuated to connect the two terminals electrically.

A. Checking for current at a door window switch.
   1. Connect light tester to center terminal of switch terminal block.
   2. Ground light tester ground lead to body metal.
   3. If tester does not light, there is no current at terminal block.



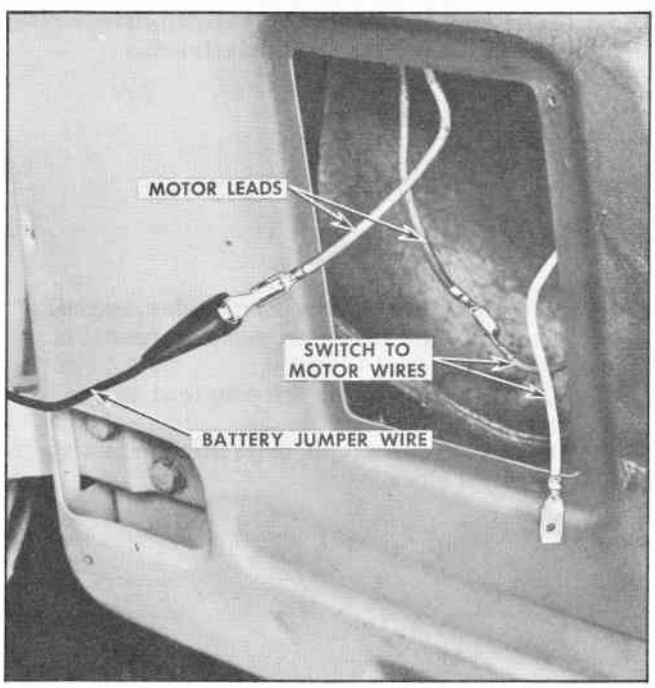
B. Checking a door window switch.
1. Place #12 jumper wire on switch terminal block between center terminal (feed) and one of two motor wire terminals. If motor operates, switch is defective.
2. Connect jumper wire between center terminal (feed) and other motor wire terminal on switch terminal block. If motor operates, switch is defective.





C. Checking the wires between a door window switch and a door window motor.
1. Place a #12 gauge jumper wire on switch terminal block between center terminal (feed) and terminal of motor wire to be checked.
2. Disconnect end of motor wire "A" from motor lead and connect wire "A" to light tester.
3. Ground light tester ground lead to body metal.
4. If tester does not light, there is no current at wire "A" terminal contacting light tester.

D. Checking a door window motor.
1. Check ground of motor. Motor is grounded to door inner panel through regulator frame attaching screws.
2. Connect one end of #12 gauge jumper wire to battery positive pole and other end to lowering cycle motor lead terminal. If motor fails to operate, motor unit is defective or mechanical stoppage exists in window system.
3. Disconnect jumper wire from lowering cycle motor lead terminal and connect it to raising cycle motor lead terminal. If motor fails to operate, motor unit is defective or mechanical stoppage exists in window system.



TYPICAL CONDITIONS

The following typical conditions and corrections have been listed as an aid for eliminating electrical failures in the electrically-powered windows. On styles with electrically-powered rear quarter or rear door windows, the right and left rear quarters and rear door window circuits are essentially the same as the right door window circuit, therefore all references to the right door window circuit will also apply to the right and left rear quarter or right and left rear door window circuits.

It should be noted that multiple failures in the circuit may lead to a combination of conditions, each of which must be checked separately.

A. Right door window will not operate from right door window switch but will operate from master switch. The trouble is located in the circuit between the circuit breaker and the right door window motor lead terminals.

1. Check feed wire from circuit breaker to right door window switch.
2. Check operation of right door window switch.
3. Check two motor wires from right door window switch to right door window motor leads.

B. Right door window will not operate from master switch, but will operate from right door window switch. The left door window will operate from master switch.
The trouble is located in the circuit between the feed wire terminal of the master switch and the right door window motor lead terminals.

1. Check operation of master switch.
2. Check two motor wires from master switch to right door window motor lead terminals.

C. Right door window will not operate from master or right door window switches. The left door window operates from master switch.
The trouble is located between the feed wire terminals of both switches and the right door window motor.

1. Check for mechanical stoppage in right door window.
2. Check operation of master and right door window switches.
3. Check motor wires from master and right door window switches to right door window motor leads.
4. Check operation of right door window motor.

D. Right and left door windows will not operate from master switch, but right door window will operate from right door window switch.
The trouble is located between the circuit breaker and the master switch motor wire terminals.

1. Check feed wire between circuit breaker and master switch.
2. Check operation of master switch.

E. Left door window will not operate but right door window will operate from master and right door window switch.
The trouble is located between the feed wire terminal on the master switch and the left door window motor.

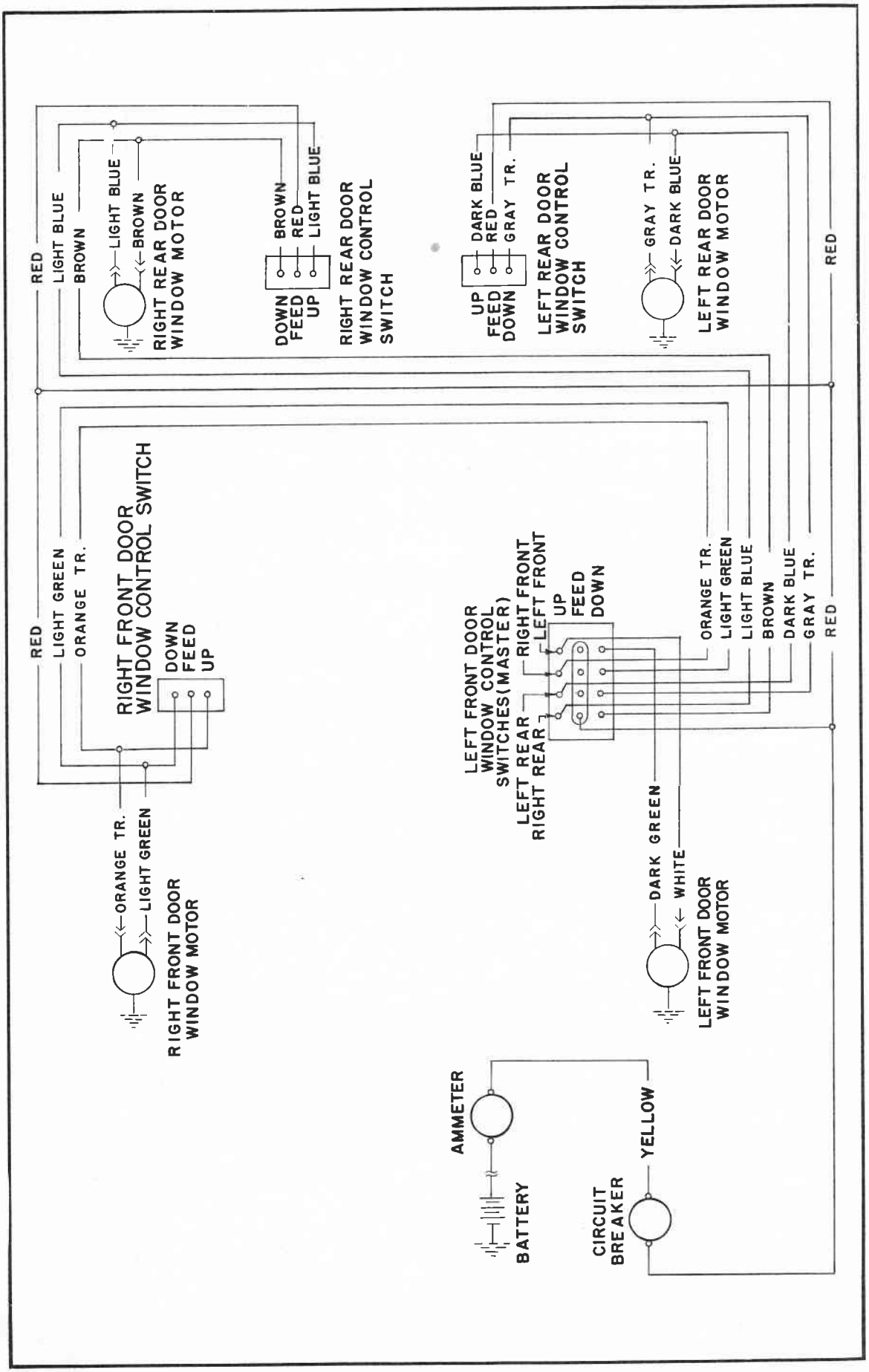
1. Check for mechanical stoppage of left door window.
2. Check operation of master switch.
3. Check motor wires from master switch to left door window motor leads.
4. Check operation of left door window motor.

F. All electrically-powered windows will not operate.

1. Check battery.
2. Check circuit from battery to ammeter.
3. Check wire from ammeter to circuit breaker.
4. Check circuit breaker.
5. Check wire from circuit breaker to window switches.
6. Check operation of window switches.

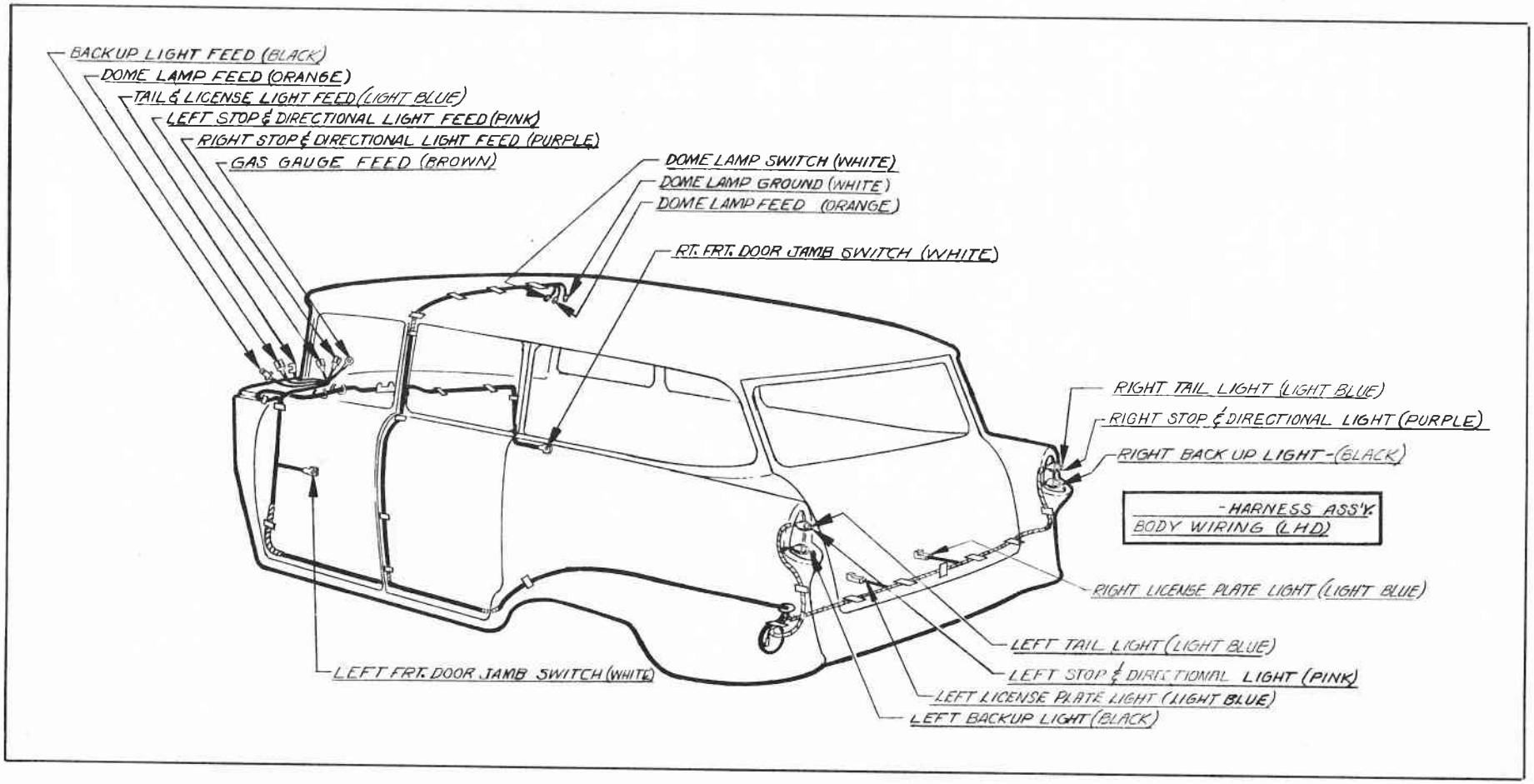
NOTE: For reference to above typical conditions, see electric wiring diagram on page 58 .

WIRING DIAGRAM



The above drawing is a schematic wiring diagram of the Special Order power Window Circuit of the 2562 and 2562DF Styles. The circuits for other Station Wagon Styles, which take the Special Order equipment are similar.

ELECTRICAL EQUIPMENT AND WIRING INSTALLATIONS



The above illustration shows the electrical equipment and wiring installation for the 2562 and 2563DF Styles. The installations are similar for 2563F and 2564 DF Styles.