

# SECTION D

## INSTRUMENT PANEL— SPECIAL AND SKYLARK

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### DIVISION II

#### DESCRIPTION AND OPERATION

which is part of the instrument panel wiring harness, attaches to the printed circuit contacts. The two retaining fingers are of different widths to insure correct

assembly of the disconnect plug in the printed circuit. If the printed circuit should become defective, it should be replaced as it is not practical to repair it.

#### 20-19 DESCRIPTION OF INSTRUMENT PANEL—SPECIAL AND SKYLARK

##### a. Description of Instrument Cluster Assembly

The instrument cluster assembly contains the speedometer, fuel gauge, indicator lights and clock. See Figure 120-19.

The generator, temperature and oil pressure indicators use red lights to warn the driver of conditions other than normal when the engine is running.

A printed circuit which is part of the speedometer housing is used to complete the circuit for the fuel gauge and the lights in the cluster assembly.

A rectangular disconnect plug,

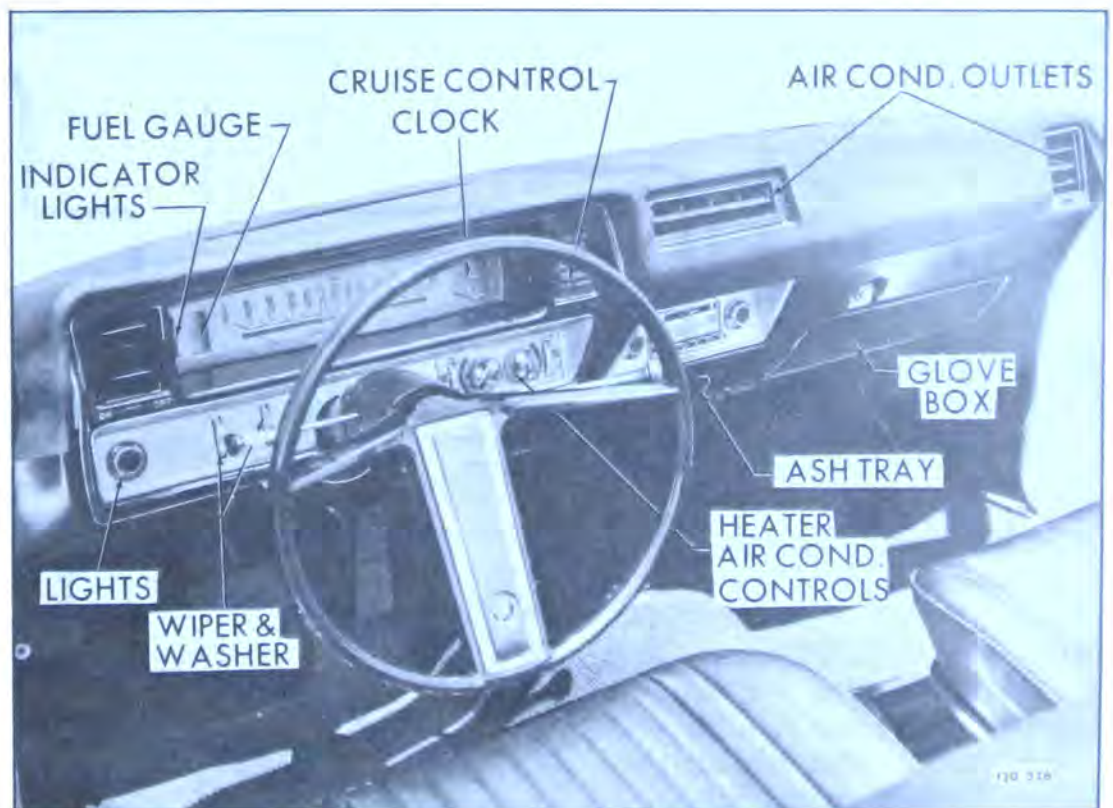


Figure 120-19—Instrument Panel 43-44000 Series

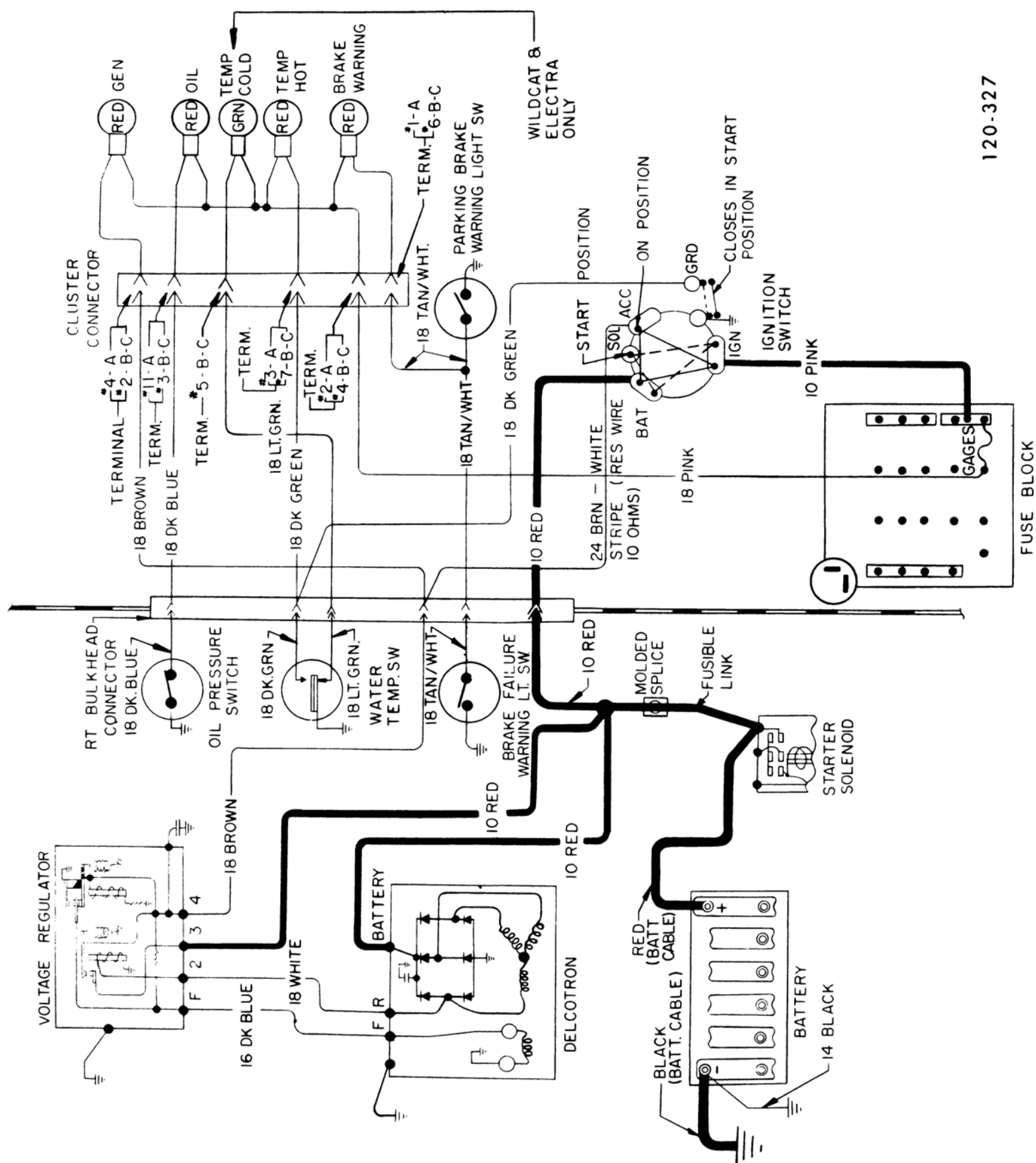


Figure 120-20—Instrument Warning Light Wiring Diagram 43-44000 Series

To remove the printed circuit, it is necessary to remove the instrument cluster.

The light bulb sockets are accessible without removing the cluster and are removed from the printed circuit by turning the bulb sockets counterclockwise.

If the car has a composite instrument panel wiring harness, connections and wiring are included to connect the following options quickly and easily: cruise control and rear window defroster.

**CAUTION:** Disconnect battery ground cable from battery terminal before removing any instrument panel unit or wiring.

#### b. Generator Charge Indicator

The red "GEN" warning light should light when the ignition is turned "ON" and before the engine is started; if not lighted, either the bulb is burned out or the indicator light wiring has an open circuit. After the engine is started, the "GEN" light should be out at all times; if the light comes on, the generator belt may be loose or missing, the generator or regulator may be defective, or the charging circuit may be defective.

To trace the generator indicator light circuit, see Figure 120-20.

With the ignition switch turned on (engine not running), current flow is through the ignition switch, out the "IGN" terminal, through the generator light in the instrument cluster, to the "4" terminal of the regulator, through the lower contacts of the voltage regulator (held closed by the spring), out the "F" terminal, in the "F" terminal of the generator, through the brush and slip

ring, through the field, through another brush and slip ring to ground.

Before the engine is started, the generator light should glow at about 1/2 brightness. This is because the voltage in the circuit before the light is about 12 volts, but the voltage at the "4" terminal after the light is about 5 volts. This makes the effective voltage across the generator light approximately 7 volts for about 1/2 brightness.

After the engine is started, the voltage put out by the generator immediately closes the field relay. This causes battery voltage from the "3" terminal to be present at the "4" terminal. See Figure 120-20. Since battery voltage is present on both sides of the generator light, the light goes out. If the generator light comes on with the engine running, the charging circuit should be tested at the first opportunity to determine the cause of the trouble. See paragraph 68-9.

#### c. Oil Pressure Indicator

The engine oil pressure indicator light is controlled by a pressure operated switch located in the oil pump cover. This light should come on when the ignition is turned "on" and the engine is not running. If not lit, either the bulb is burned out, the wiring has an open circuit or the oil switch is defective.

If the engine oil pressure drops below a safe level during operation, the circuit is completed through the pressure switch to ground, and the "Oil" indicator light in the cluster will be turned on. See Figure 120-20.

If the "Oil" indicator stays on or comes on when the engine is run-

ning at speeds above idle, stop engine immediately and find out reason. The following may be the cause, rather than low oil pressure.

1. Wiring circuit between oil pressure switch and light grounded. Remove connector from pressure switch, if light stays on trouble is in wiring.

2. Switch defective. Replace switch.

#### d. Temperature Indicator

A temperature switch located in right front of the intake manifold controls the operation of the "Temp" indicator light located in instrument cluster.

If the engine cooling system is not functioning properly and the water temperature should reach 248°F., the "Temp" indicator will be turned on by the temperature switch. As a test circuit to check whether the "Temp" indicator bulb is functioning properly, a light wire which leads to the "GND" terminal of the ignition switch is connected into the temperature switch circuit. See Figure 120-20. When the ignition is in the "Start" position (engine cranking), the "GND" terminal is grounded inside the switch and the "Temp" bulb will be lit. When the engine is started and the ignition switch is in the "On" position, the test circuit is opened and the bulb is then controlled by the temperature switch.

#### e. Trouble Diagnosis—Generator, Oil Pressure & Temperature Indicators

Use Figure 120-20 to trace wiring circuits for indicator lights. To determine if there is a ground in the indicator light circuit, remove connector from control switch. If light stays on, trouble is in circuit.

| COMPLAINT                                            | POSSIBLE CAUSE                                                                                                                                                                                                          |
|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1. GENERATOR INDICATOR</b>                        |                                                                                                                                                                                                                         |
| Light on, ignition "Off"                             | Positive diode shorted.                                                                                                                                                                                                 |
| Light not lit, ignition "On" and engine not running. | Bulb burned out. Replace.<br>Positive diode shorted.<br>Open in light circuit. Locate and correct.                                                                                                                      |
| Light on, engine running.                            | No generator output. Check output, paragraph 68-9.<br>Loose or broken generator belt.                                                                                                                                   |
| <b>2. OIL PRESSURE INDICATOR</b>                     |                                                                                                                                                                                                                         |
| Light not lit, ignition "On" and engine not running. | Bulb burned out. Replace.<br><br>Open in light circuit. Locate and correct.<br>Oil pressure switch defective. Replace.                                                                                                  |
| Light on, engine running above idle speed.           | Wiring between light and switch grounded. Locate and correct.<br>Oil pressure switch defective. Replace.<br>Low oil pressure. Locate cause and correct.                                                                 |
| <b>3. TEMPERATURE INDICATOR</b>                      |                                                                                                                                                                                                                         |
| Light not lit when cranking engine.                  | Bulb burned out. Replace.<br>Open in light circuit. Locate and correct.<br>Ignition switch defective. Replace.                                                                                                          |
| Light on, engine running.                            | Wiring between light and switch grounded. Locate and correct.<br>Temperature switch defective. Replace.<br>Cooling system water temperature above 248°F. Find cause and correct.<br>Ignition switch defective. Replace. |

## **DIVISION III**

### **SERVICE PROCEDURES**

#### **120-20 REMOVAL AND INSTALLATION OF INSTRUMENT PANEL PARTS—SPECIAL AND SKYLARK**

Before starting any instrument panel repair, always disconnect battery ground cable.

##### **a. R. & I. Instrument Cluster Assembly**

**CAUTION:** If equipped with cruise control, upper speedo cable must be disconnected from transducer before cluster housing is pulled back.

1. Remove six screws from instrument panel compartment body assembly and remove assembly.

2. Remove radio knobs and es-

cutcheons. Remove two 5/8 hex nuts and two screws from radio filler plate and remove plate. (DO NOT REMOVE RADIO).

3. Remove four 3/8 hex nuts at top underside of dash assembly and two screws at housing assembly. Pull instrument panel upper cover rearward to remove.

4. Remove four screws from

steering column filler and remove filler. If AC, remove one screw at left AC distribution duct and remove duct from instrument panel housing.

5. Remove four nuts from lower edge of instrument panel housing.

6. Remove four screws across upper edge of instrument panel housing.

7. Remove two nuts from steering column mounting bracket and disconnect shift quadrant link wire at steering column. Lower steering column.

8. Protect steering column, then pull instrument panel rearward and rotate it so back of cluster is visible.

9. Remove two nuts from heater control installation and separate from instrument panel housing.

10. Disconnect speedometer cable (from below).

11. Disconnect from instrument cluster:

- (a) Wiring harness clip.
- (b) Printed circuit connector.
- (c) Clock connector.

12. Disconnect accessory switch and cruise control switch assembly wires from top side of instrument panel housing.

13. Disconnect headlight switch connector.

14. Disconnect windshield wiper/washer switch connector.

15. Disconnect cigar lighter connector.

16. Remove instrument panel housing assembly.

17. Remove four 1/4 hex screws and remove instrument panel cluster from instrument panel housing.

18. Install instrument cluster by reversing above steps.

#### b. R. & I. Speedometer

1. To remove a speedometer, first remove instrument cluster. See subparagraph a. above for instrument cluster removal and installation.

2. Remove clock reset knob and seven retainer clips from cluster face. Remove one retainer screw from cluster bezel.

3. Remove three 1/4 hex screws from speedometer back and remove speedometer from cluster.

4. Install speedometer by reversing above steps.

#### c. R. & I. Printed Circuit

1. To remove a printed circuit, first remove instrument housing. See subparagraph a. above for instrument housing removal.

2. The printed circuit is removed by first removing the ten cluster light bulbs.

3. Remove three 1/4 hex screws from gas gage dash unit and remove unit.

4. Remove three 1/4 hex screws from printed circuit and remove circuit.

5. Install printed circuit by reversing above steps.

#### d. R. & I. Clock

1. Remove radio.

2. If equipped with air conditioning, remove instrument panel upper cover.

3. The clock is removed from the housing by removing two 1/4 hex screws and the clock reset knob from the clock.

4. Install clock by reversing above steps.

#### e. R. & I. Gas Gauge Dash Unit

The gas gage dash unit is removed from below by removing

three 1/4 hex screws from the unit. If AC, remove two screws at left AC distribution duct and remove duct.

#### f. R. & I. Cluster Light Bulbs

Bulbs in the cluster can be removed from below without removing any other part. If AC, remove two screws at left AC distribution duct and remove duct.

#### g. R. & I. Radio

1. Remove radio knobs and escutcheons. Remove two 5/8 hex nuts and two screws from radio filler plate and remove plate.

2. Remove ash receiver assembly.

3. If AC, remove two screws at lower center AC duct and remove duct.

4. Remove radio bracket to radio screw and two bracket screws at instrument panel and remove bracket.

5. Remove two instrument panel attaching nuts at radio face.

6. Disconnect radio wiring and remove radio downward.

7. Install radio by reversing above steps.

#### h. R. & I. Front Radio Speaker

1. Remove radio knobs and escutcheons. Remove two 5/8 hex nuts and two screws from radio filler plate and remove plate. (Do not remove radio).

2. Unplug speaker connector from radio.

3. Remove screw at speaker bracket and remove speaker through radio filler plate opening.

4. Install speaker by reversing above steps.

**NOTE:** If AC, remove radio as explained in subparagraph g.

Remove instrument panel upper cover as explained in subparagraph a. and remove two screws at upper center AC duct and remove duct.

**i. R. & I. Ignition Switch**

1. If AC, remove two screws at left AC distribution duct and remove duct.
2. Remove ignition switch lock cylinder (in accessory position).
3. Remove switch retaining nut.
4. Lower switch and unplug from connector by depressing retainer tabs.
5. Install ignition switch by reversing above steps.

**j. R. & I. Light Switch**

1. If AC, remove two screws at left AC distribution duct and remove duct.
2. Pull switch knob out to last

notch, then depress latch button and pull knob and rod assembly out of switch.

3. Remove switch escutcheon.
4. Pull switch down and unplug from connector.
5. Install light switch by reversing above steps.

**k. R. & I. Windshield Wiper/Washer Switches**

1. If AC, remove two screws at left AC distribution duct and remove duct.
2. Remove four screws from steering column filler and remove filler.
3. Unplug connectors from switches.
4. Remove two 1/4 hex screws from switches and pull switches down.
5. Install switches by reversing above steps.

**l. R. & I. Cigar Lighter Case Assembly**

1. If AC, remove two screws at left AC distribution duct and remove duct.
2. Remove cigar lighter retainer and escutcheon.
3. Remove element and knob assembly and case.
4. Install assembly by reversing above steps.

**m. R. & I. Accessory or Cruise Control Switch Assembly**

1. Pry switch cover plate from front of cluster assembly.
2. Remove two retaining screws from switch.
3. Pull switch from connector.
4. Reverse above procedure to complete installation.

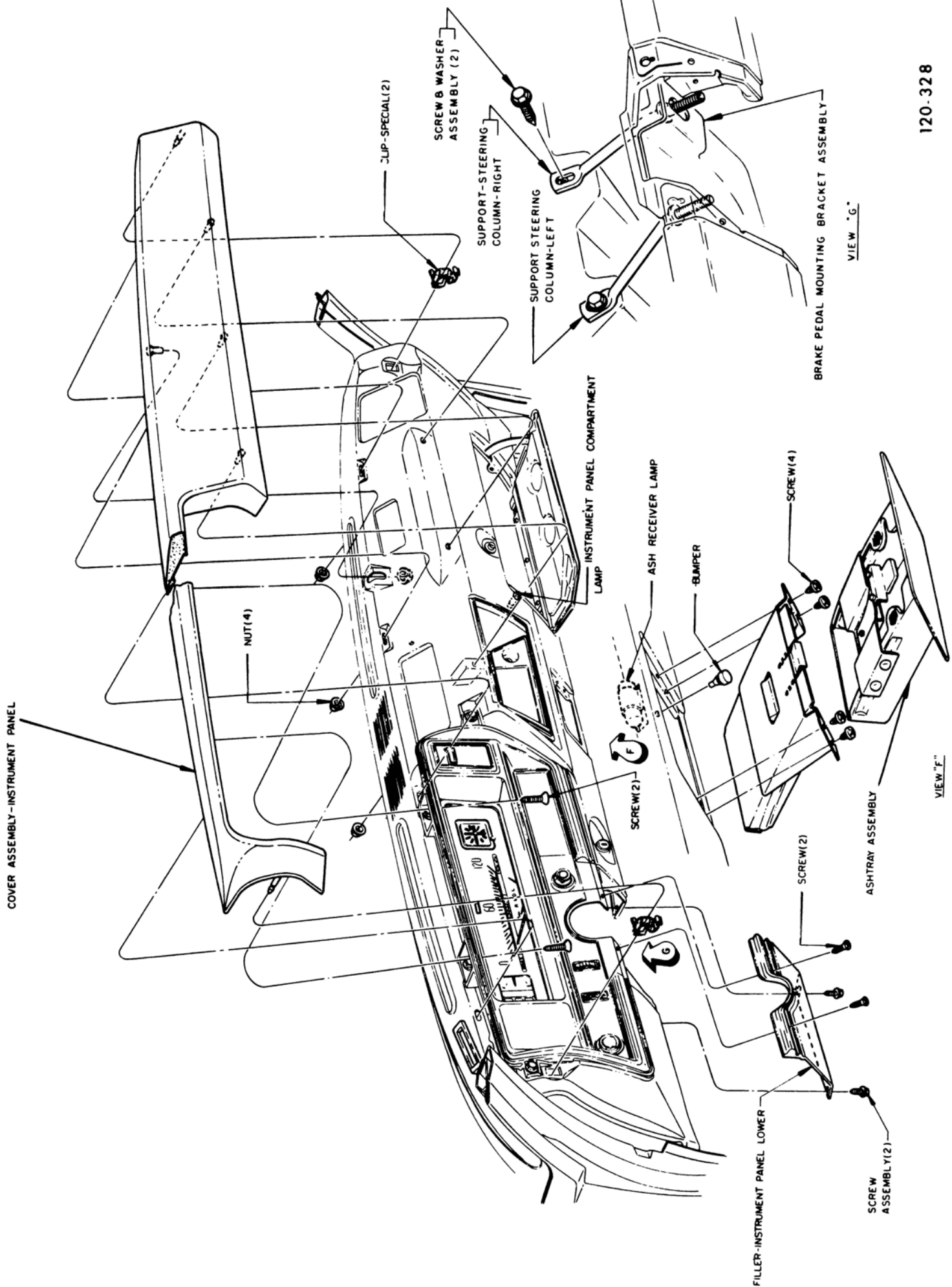
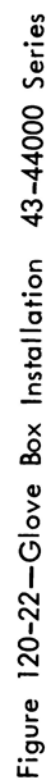


Figure 120-21—Instrument Panel Cover and Ash Tray Installation 43-44000 Series



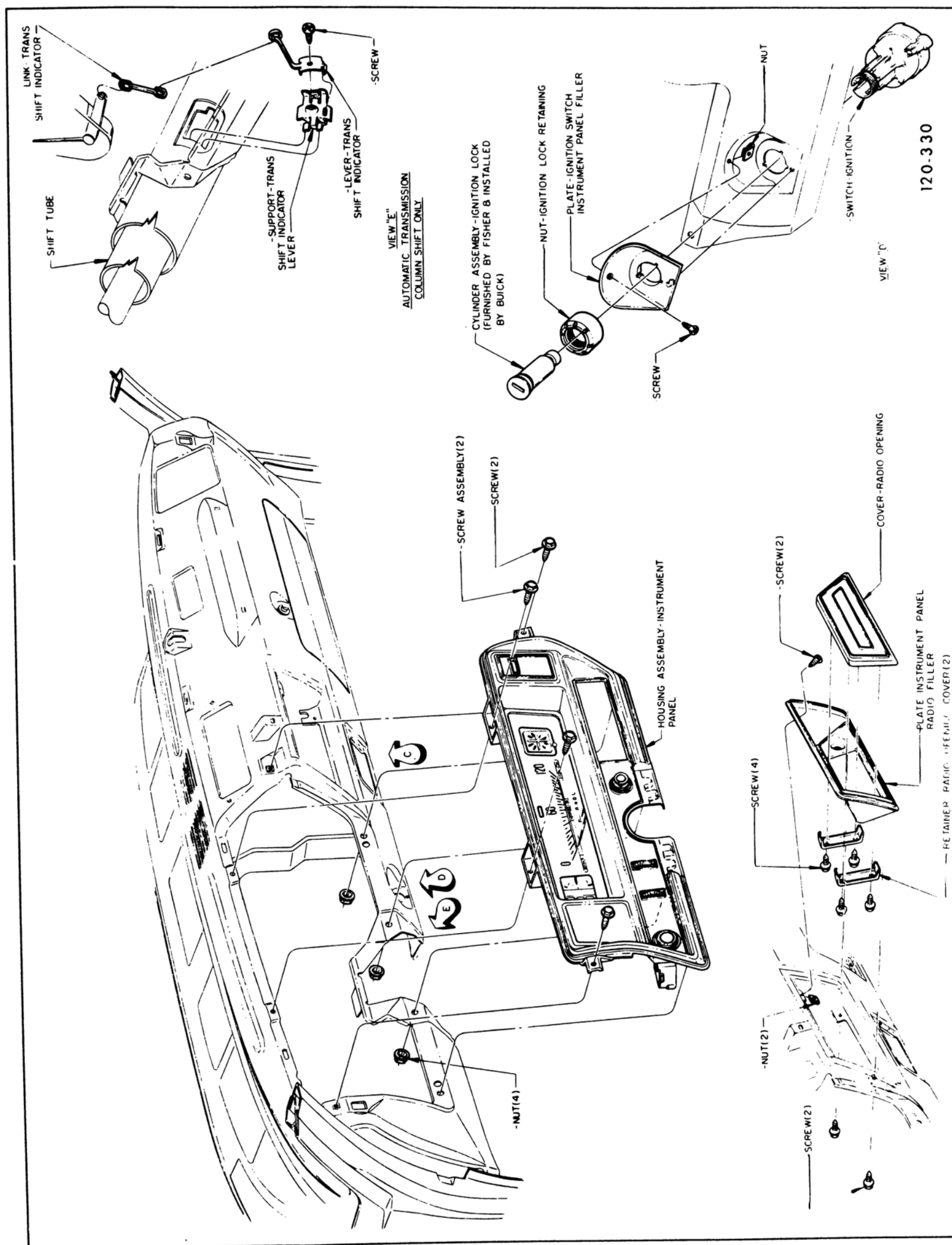


Figure 120-23—Instrument Housing and Switch Installation 43-44000 Series

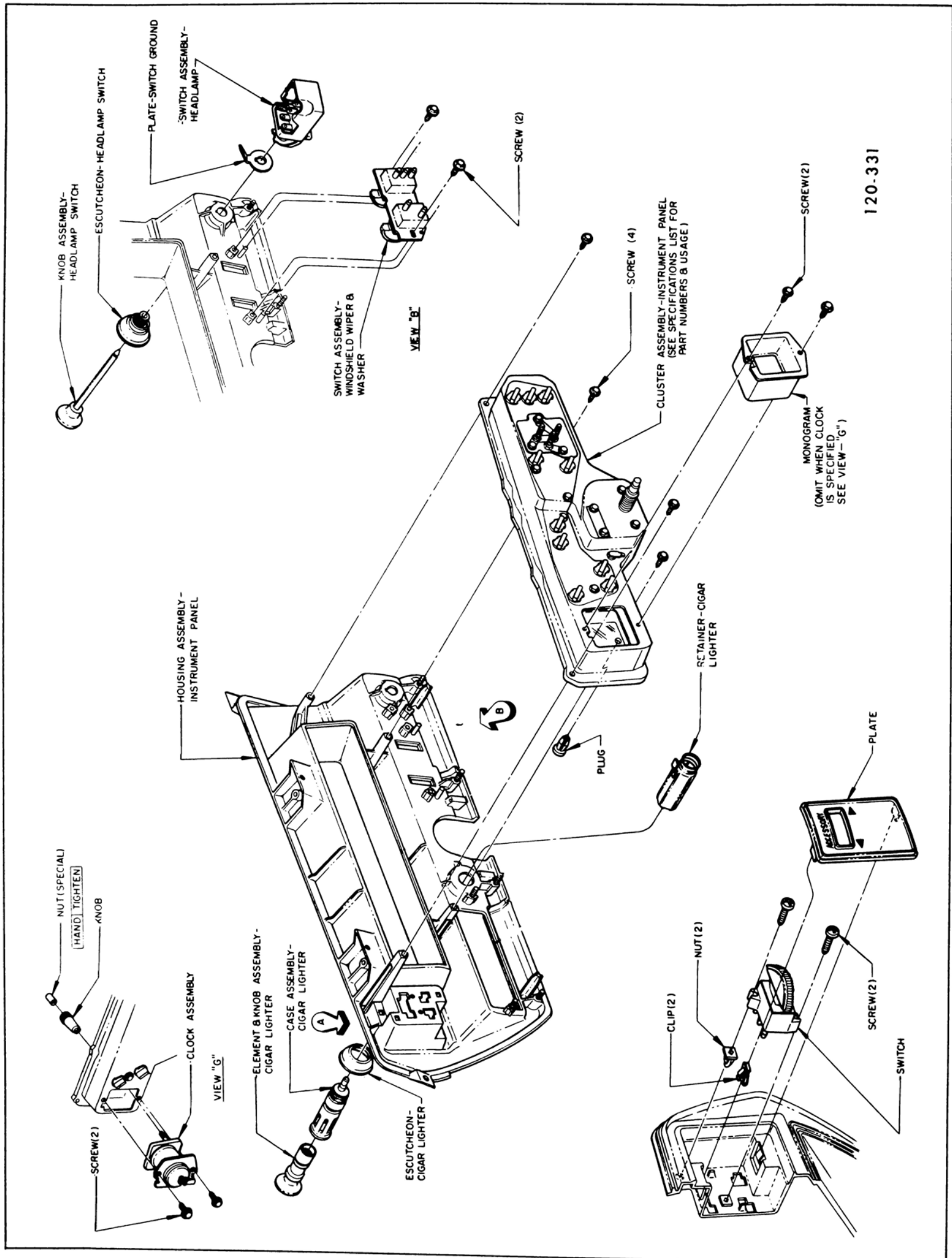


Figure 120-24—Instrument Cluster, Cigar Lighter, Clock and Switches Installation 43-44000 Series