

# SECTION D

## INSTRUMENT PANEL—SPECIAL AND SKYLARK

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## DIVISION II

### DESCRIPTION AND OPERATION

#### 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 120-25.

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, 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.

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.

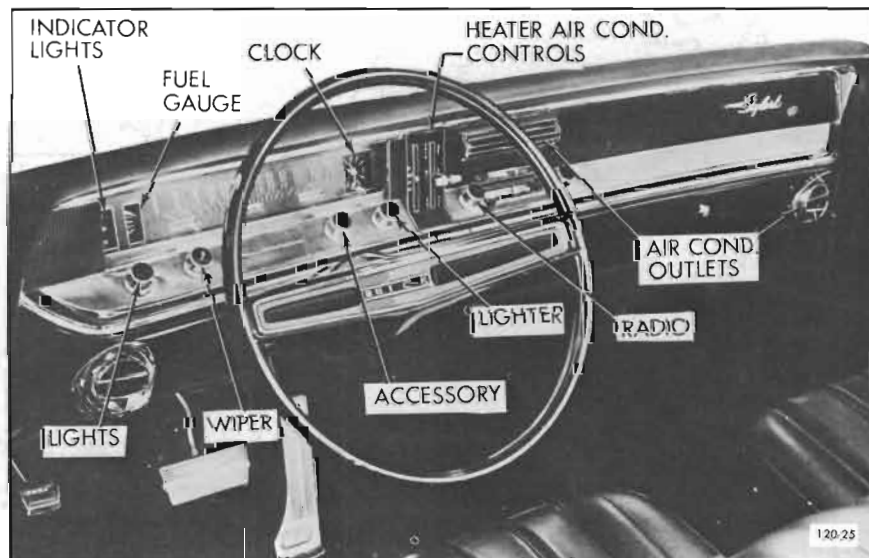


Figure 120-25—Instrument Panel - Special and Skylark

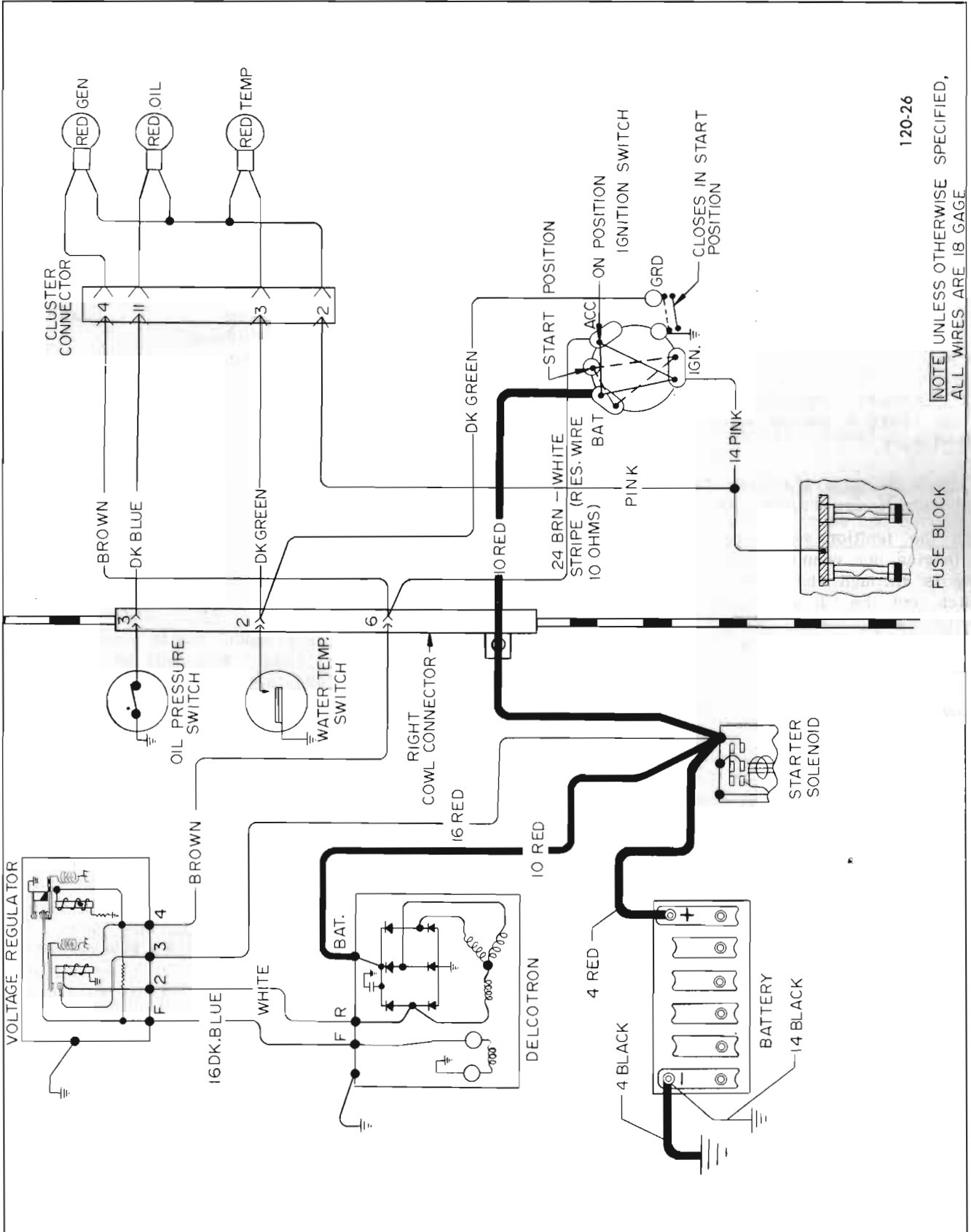


Figure 120-26—Indicator Warning Light Diagram - Special and Skylark

**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 120-26.

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 120-26. 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 120-26.

If the "Oil" indicator stays on or comes on when the engine is running 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 wire which is connected to the "GND" terminal of ignition switch is tapped into the temperature switch circuit. See Figure 120-26. When the ignition is in the "Start" position (engine cranking), the "GND" terminal is grounded inside 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 120-26 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
<p>1. GENERATOR INDICATOR</p> <p>Light on, ignition "Off"</p> <p>Light not lit, ignition "On" and engine not running.</p> <p>Light on, engine running.</p>	<p>Positive diode shorted.</p> <p>Bulb burned out. Replace.</p> <p>Positive diode shorted.</p> <p>Open in light circuit. Locate and correct.</p> <p>No generator output. Check output, paragraph 68-9.</p> <p>Loose or broken generator belt.</p>
<p>2. OIL PRESSURE INDICATOR</p> <p>Light not lit, ignition "On" and engine not running.</p> <p>Light on, engine running above idle speed.</p>	<p>Bulb burned out. Replace.</p> <p>Open in light circuit. Locate and correct.</p> <p>Oil pressure switch defective. Replace.</p> <p>Wiring between light and switch grounded. Locate and correct.</p> <p>Oil pressure switch defective. Replace.</p> <p>Low oil pressure. Locate cause and correct.</p>
<p>3. TEMPERATURE INDICATOR</p> <p>Light not lit when cranking engine.</p> <p>Light on, engine running.</p>	<p>Bulb burned out. Replace.</p> <p>Open in light circuit. Locate and correct.</p> <p>Ignition switch defective. Replace.</p> <p>Wiring between light and switch grounded. Locate and correct.</p> <p>Temperature switch defective. Replace.</p> <p>Cooling system water temperature above 248°F. Find cause and correct.</p> <p>Ignition switch defective. Replace.</p>

## 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 strap.

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

1. Remove five screws and pull instrument panel upper cover rearward to remove.
2. Lower steering column and remove one 1/4 hex screw (found in column cutout) from lower edge of instrument panel housing.
3. Remove one 1/4 hex screw from lower edge of instrument panel housing through glove box hole.

4. Remove four remaining 1/4 hex screws from lower edge of instrument panel housing.
5. Remove six screws across upper edge of instrument panel housing.
6. Disconnect speedometer cable.
7. Protect steering column, then pull instrument panel rearward and rotate it so back of cluster is visible.

8. Disconnect from instrument cluster:

- a. Printed circuit connector.
- b. Clock connector.
- c. Shift quadrant light.

9. Remove four 1/4 hex screws and remove instrument panel cluster.

#### **b. R. & I. Speedometer or Printed Circuit**

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

#### **c. R. & I. Gas Gauge Dash Unit**

The gas gauge dash unit is accessible from below without removing any other parts.

#### **d. R. & I. Cluster Light Bulbs**

Bulbs in the left half of the cluster can be removed from below without removing any other part. To remove bulbs from the right half of the cluster, however, the left defroster duct must be removed to provide working clearance.

#### **e. R. & I. Clock**

1. Remove ash receiver assembly.
2. Remove radio bracket to radio screw.
3. Remove radio knobs and escutcheons. Remove two 5/8 hex nuts and remove radio downward.
4. Remove left defroster duct. Remove two 1/4 hex screws, slide duct to left to disengage then slide to right and down.
5. Remove clock reset knob.
6. Remove two 1/4 hex head screws. Pull clock down and unplug connector.

#### **f. R. & I. Radio**

1. Remove ash receiver assembly.
2. Remove radio bracket to radio screw.
3. Remove radio knobs and escutcheons. Remove two 5/8 hex nuts.
4. Remove radio downward.

#### **g. R. & I. Front Radio Speaker**

1. Remove glove box.
2. Unplug speaker connector from

radio. Unplug radio feed connector from speaker connector.

3. Remove four 1/4 hex head screws and remove speaker through glove box opening.

#### **h. R. & I. Ignition Switch**

1. Remove ignition switch lock cylinder (in accessory position).
2. Remove switch retaining nut.
3. Pull ignition switch down and unplug from connector.

#### **i. R. & I. Light Switch**

1. Pull switch knob out to last notch, then depress latch button and pull knob and rod assembly out of switch.
2. Remove switch escutcheon.
3. Pull switch down and unplug from connector.

#### **j. R. & I. Windshield Wiper Switch**

1. Loosen set screw and remove knob.
2. Unscrew switch escutcheon by hand.
3. Pull wiper switch down and unplug from connector.

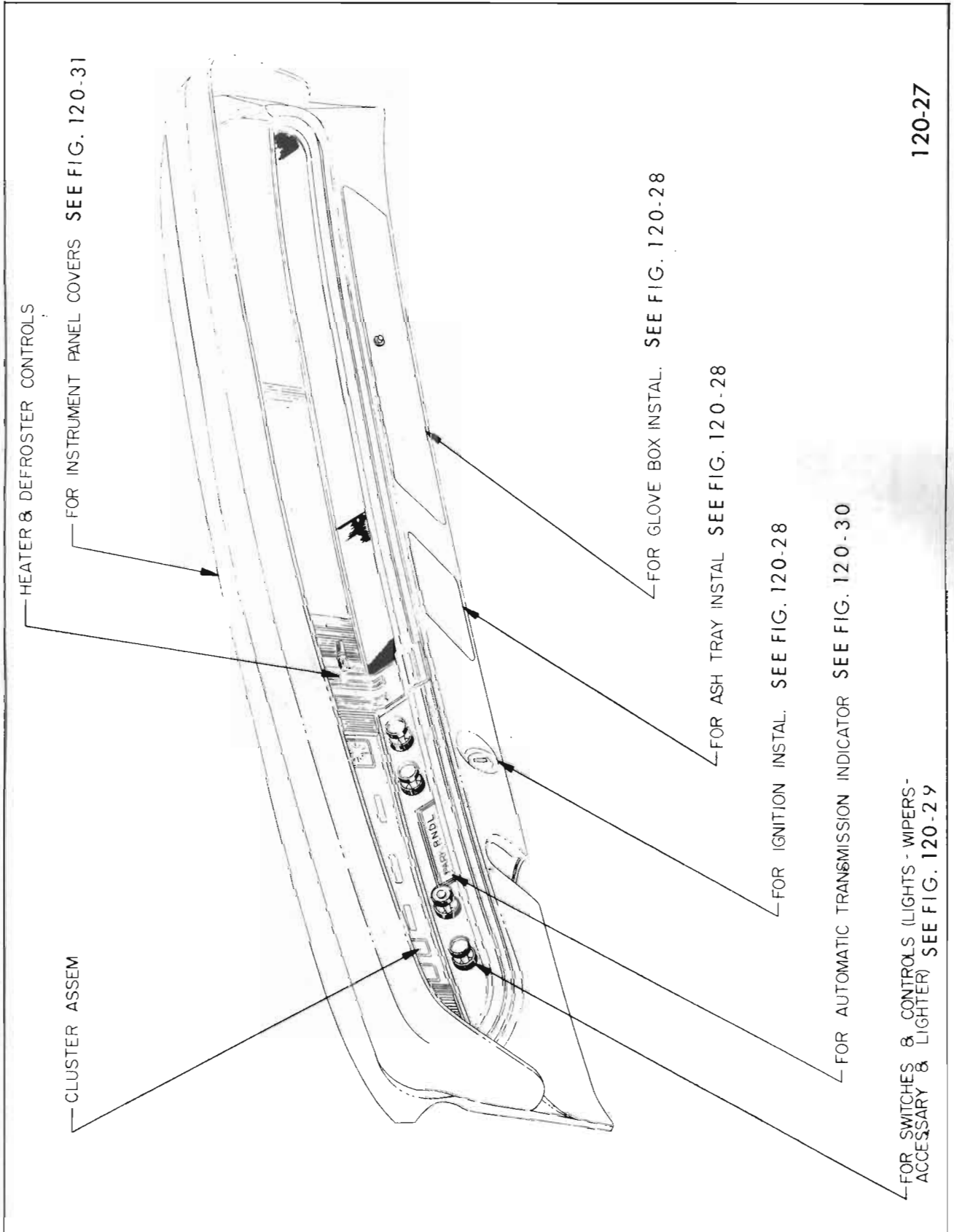


Figure 120-27—Instrument Panel Installation - Special and Skylark

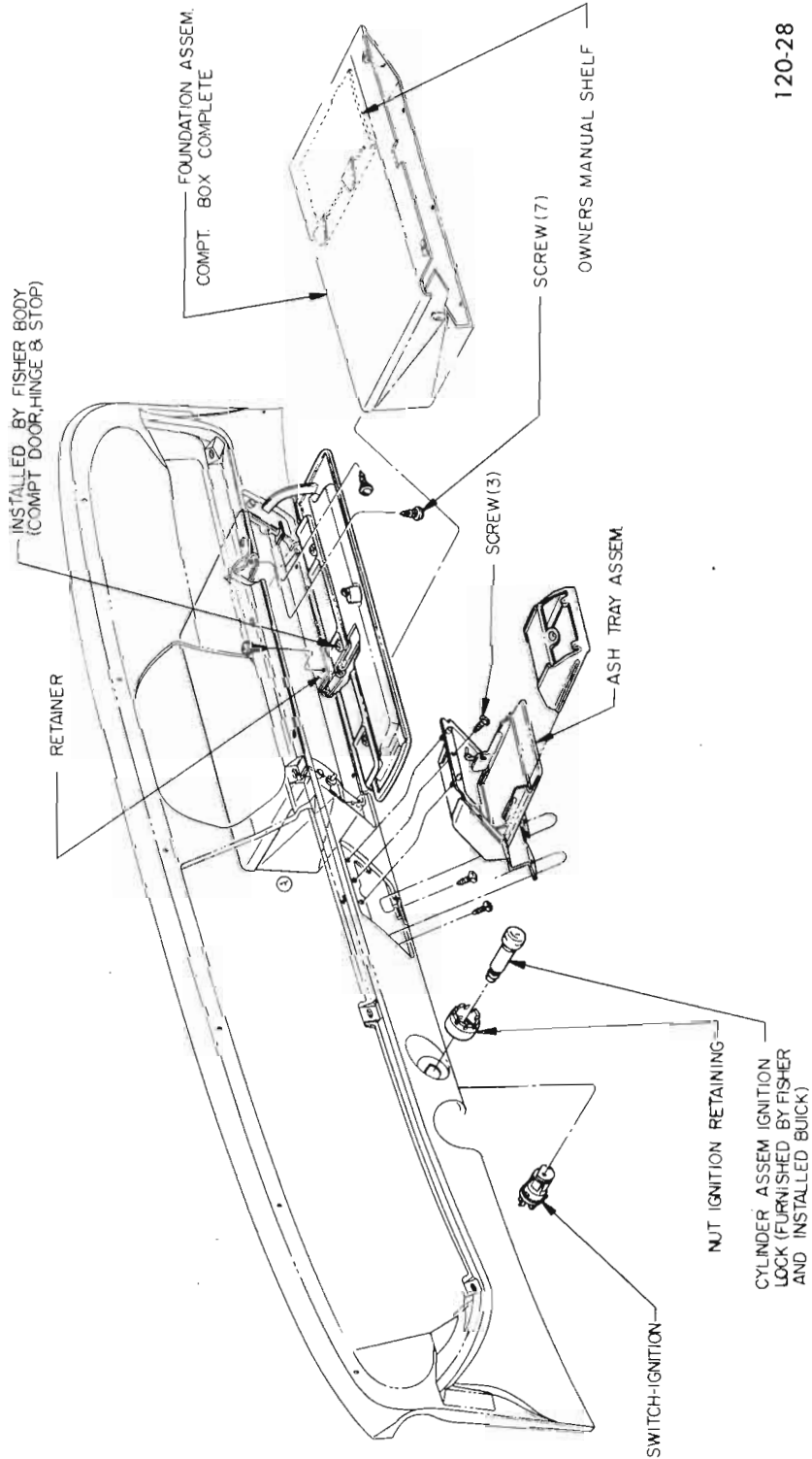


Figure 120-28—Ignition Switch, Ash Tray and Glove Box Installation - Special and Skylark

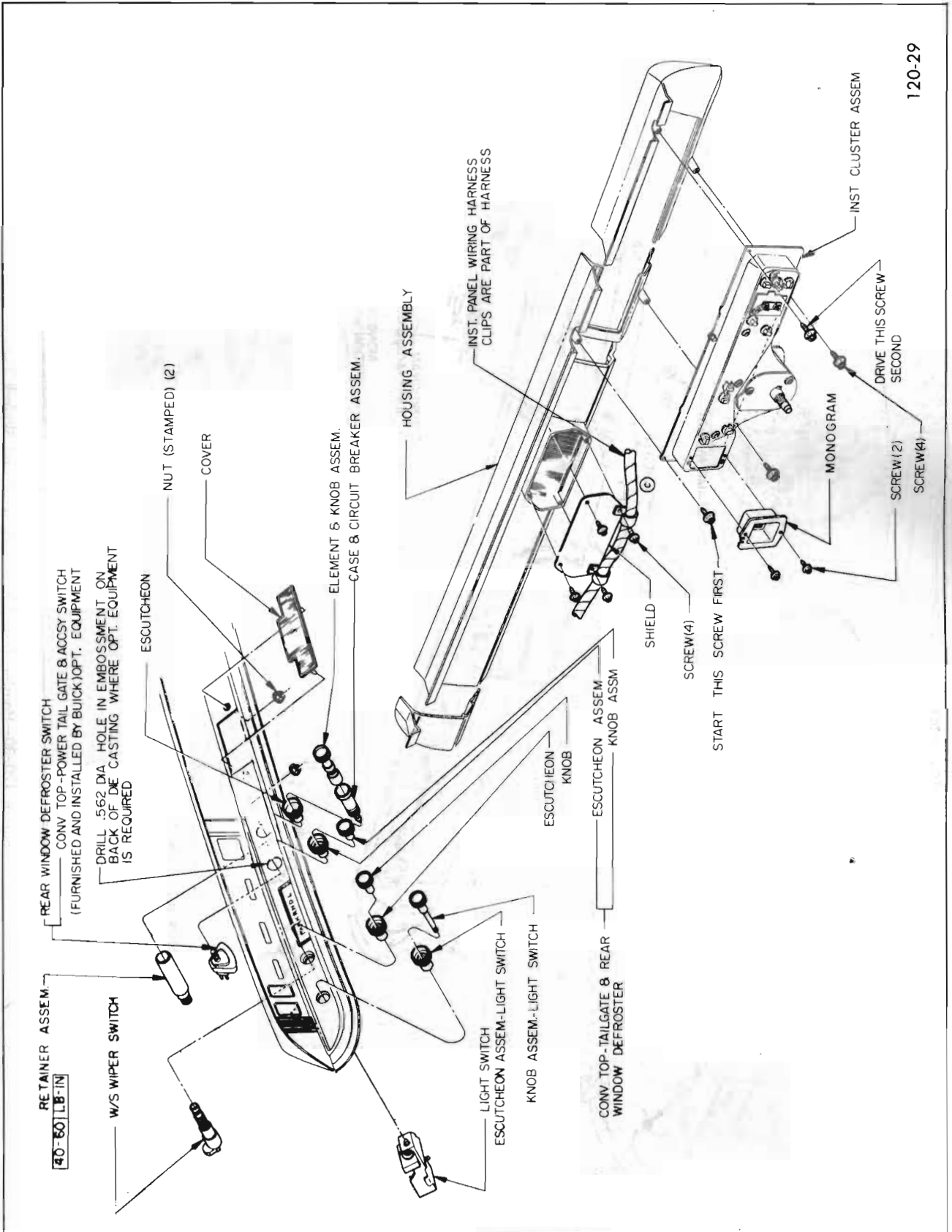
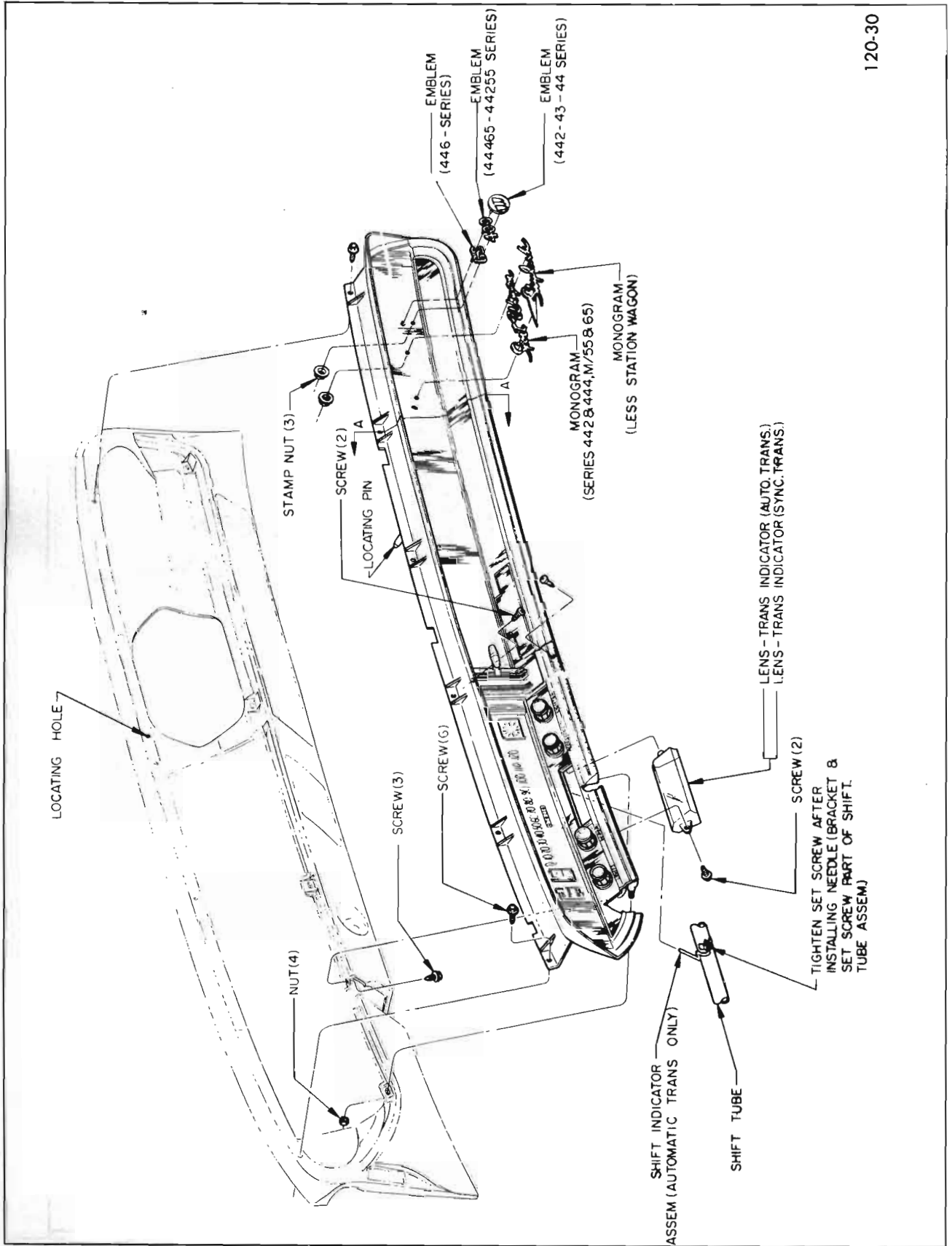


Figure 120-29—Switch Installation - Special and Skylark





120-30

Figure 120-30—Housing Installation - Special and Skylark

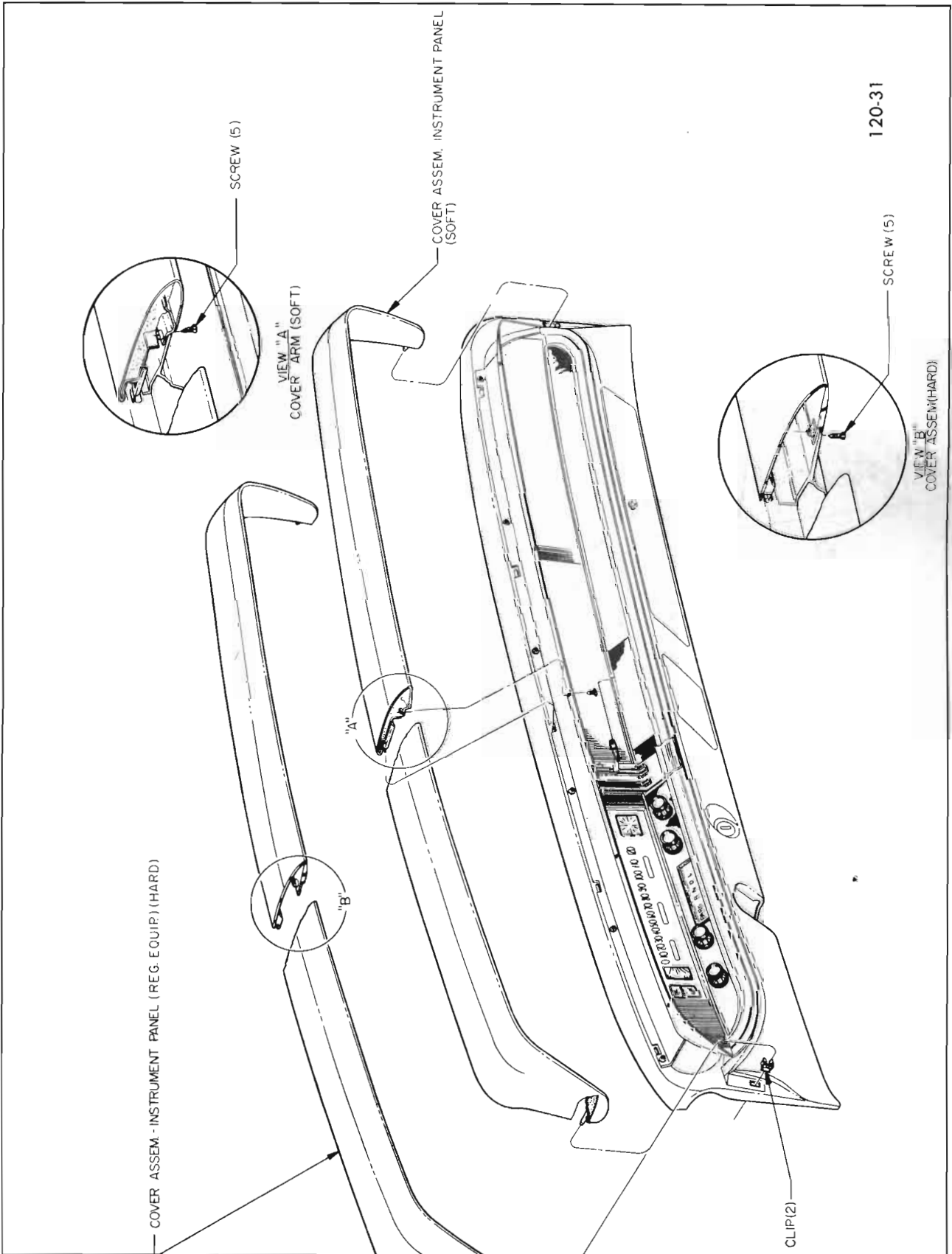


Figure 120-31—Upper Cover Installation - Special and Skylark

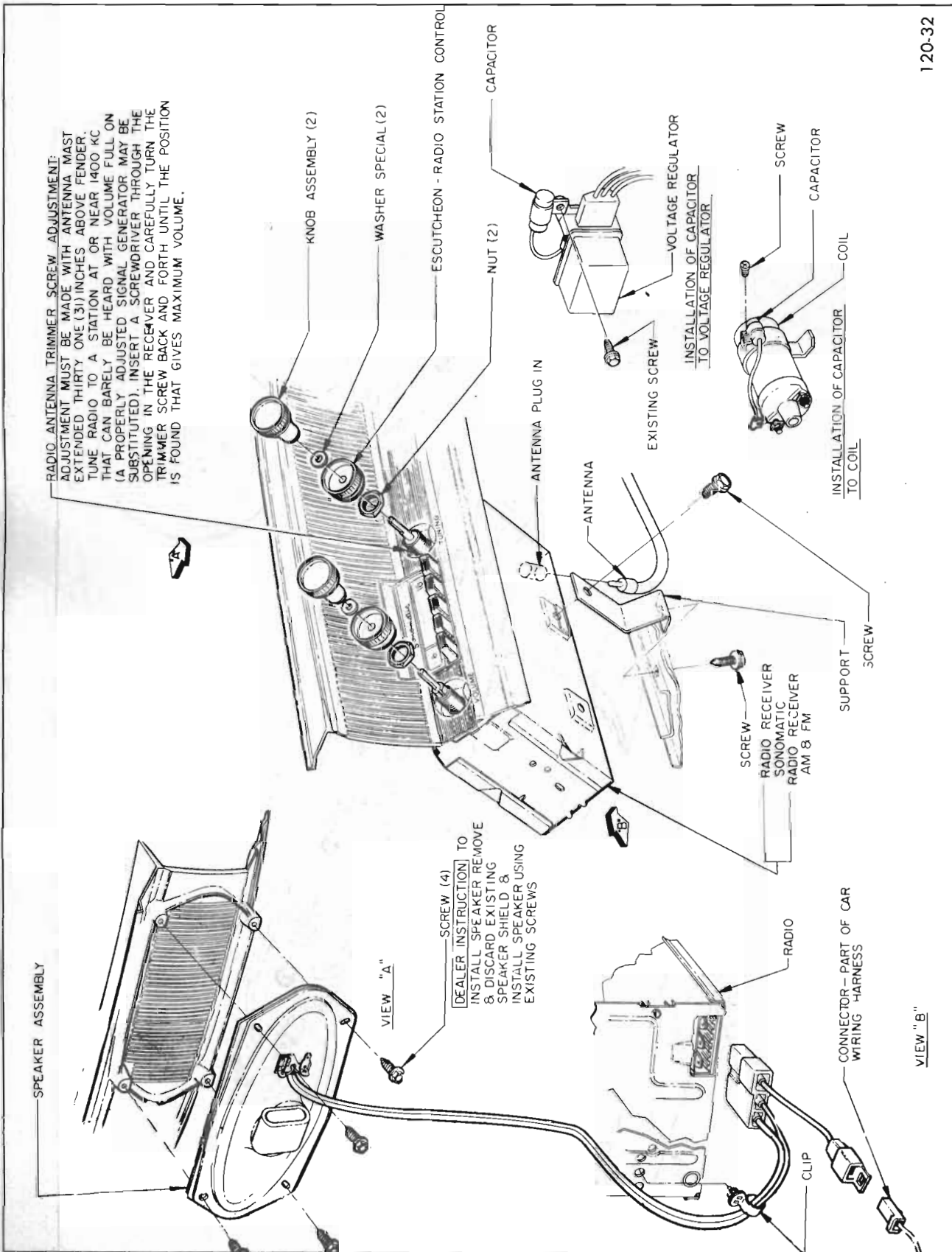


Figure 120-32—Radio Installation - Special and Skylark

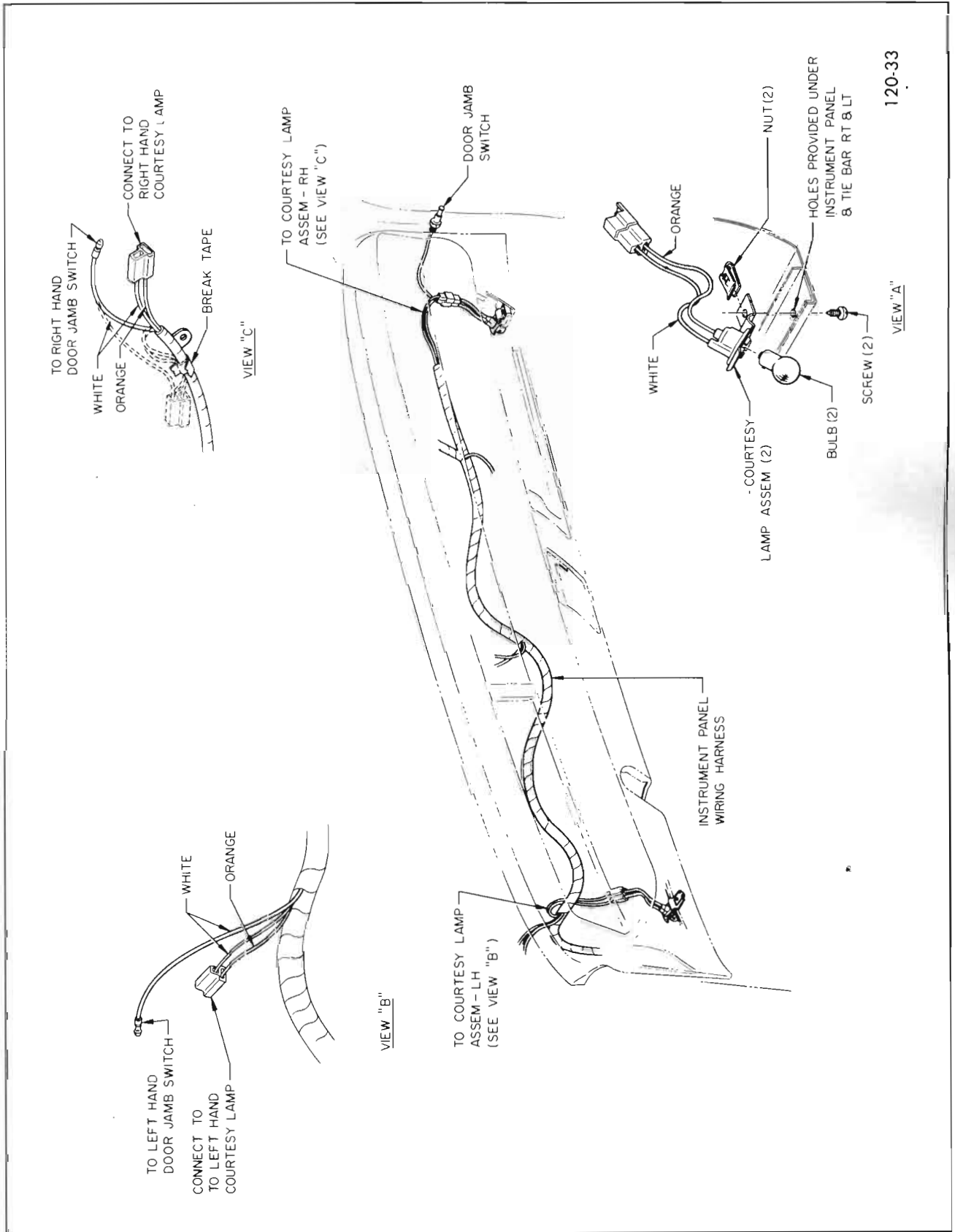


Figure 120-33—Courtesy Lamp Installation - Special and Skylark

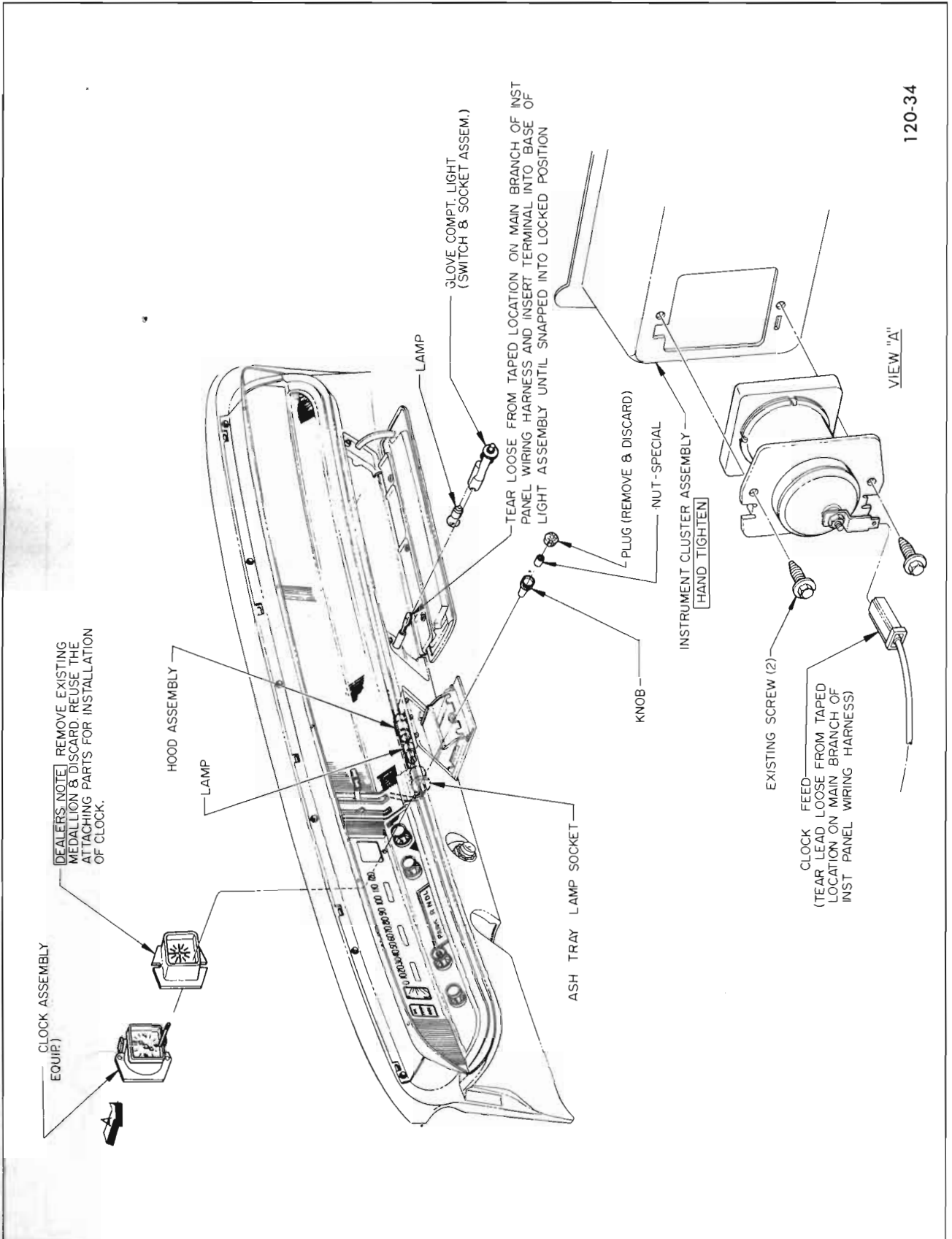


Figure 120-34—Clock, Ash Tray and Glove Box Light Installation - Special and Skylark