

SECTION E

INSTRUMENT PANEL 45-46-48-49000 SERIES

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DIVISION I TROUBLE DIAGNOSIS

120-25 TROUBLE DIAGNOSIS CHART - GENERATOR OIL PRESSURE AND TEMPERATURE INDICATORS

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 above idle speed.</p>	<p>Positive diode shorted. Locate and replace.</p> <p>Bulb burned out. Replace.</p> <p>Open in light circuit. Locate and correct.</p> <p>Positive diode shorted. Locate and replace.</p> <p>No generator output. Check output, paragraph 68-27 or 68-42, sub paragraph i for 49000 Series.</p> <p>Negative diode shorted.</p> <p>Loose or broken generator belt.</p> <p>Resistance or open in field circuit.</p> <p>Defective field-light relay.</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>Oil pressure below 2 lbs. Locate cause and correct.</p>
<p>3. TEMPERATURE INDICATORS</p> <p>(a) Hot Indicator</p> <p>Light not lit when cranking engine.</p> <p>Light on, engine running.</p> <p>(b) Cold Indicator</p> <p>Light not lit, ignition "On" and engine cold.</p> <p>Light on, after normal engine warm-up period.</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> <p>Bulb burned out. Replace.</p> <p>Open in light circuit. Locate and correct.</p> <p>Water temperature switch defective. Replace.</p> <p>Wiring between light and switch grounded. Locate and correct.</p> <p>Water temperature switch defective. Replace.</p> <p>Thermostat in cooling system defective. Replace.</p>

Figure 120-44 Indicator Trouble Diagnosis - 45-46-48000 Series

DIVISION II

DESCRIPTION AND OPERATION

120-26 DESCRIPTION OF INSTRUMENT PANEL - 45-46-48-49000 Series

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

a. Description of Instrument Cluster Assembly

The instrument cluster assembly contains the speedometer, fuel gage, indicator lights and clock.

A printed circuit is used to complete the circuits for all the lights and instruments in the cluster assembly. See Figures 120-65 and 120-66. A rectangular disconnect plug which is part of the instrument panel wiring harness attaches to the printed circuit connector tabs. The disconnect plug has two retaining fingers of different widths to insure correct assembly of the plug in the printed circuit. If the printed circuit should become defective, it should be replaced as it is not practical to repair it.

An accessory block is an integral part of the instrument panel wiring harness. If the car has a composite wiring harness, this block makes it possible to connect the wiring for the following options quickly and easily: cruise control and rear window defroster.

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. See paragraph 68-24 or 68-36 for troubleshooting procedures.

To trace the generator indicator light circuit, see Figure 120-66. With the ignition switch turned on (engine not running), current flow is through the ignition switch, 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 120-66. 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 68-6.

c. Oil Pressure Indicator

The engine oil pressure indicator light is controlled by a pressure operated switch located in the main oil gallery at the right front of the engine.

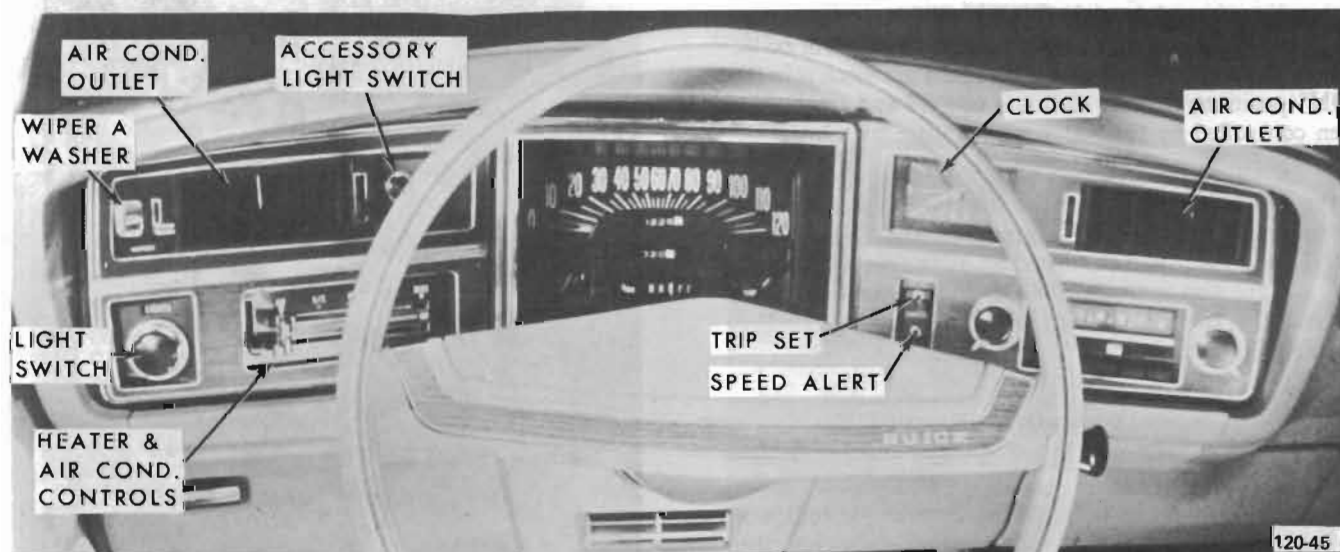


Figure 120-45 Instrument Panel - 45-46-48-49000 Series

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 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.

If the "OIL" indicator stays on or comes on when the engine is running at speeds above idle, 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 water temperature switch located in the right front of the intake manifold, controls the operation of a temperature indicator with a red lens. A metal temperature switch located in the rear of the left head controls the operation of a "STOP ENGINE" temperature indicator.

NOTE: *LeSabres do not have a "STOP ENGINE" light.*

If the engine cooling system is not functioning properly and the water temperature should reach approximately 253 degrees F., the "HOT" indicator will be turned on by the water temperature switch. *As a test circuit to check whether the "HOT" indicator bulb is functioning properly, a wire which leads to the "GND" terminal of the ignition switch is connected in to its circuit.* See Figure 120-66. When the ignition is in the "START" position (engine cranking), the "GND" terminal is grounded inside the switch and the "HOT" indicator 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 water temperature switch.

If the metal temperature of the left cylinder head should reach approximately 265 degrees F., the "STOP ENGINE" indicator will be turned on by the metal temperature switch. This indicator bulb has a separate test circuit to ground in the ignition switch during cranking. See Figure 120-66.

e. Trouble Diagnosis - Generator, Oil Pressure Temperature Indicators

Use Figure 120-66 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.

DIVISION IV

REMOVAL AND INSTALLATION

120-27 REMOVAL AND INSTALLATION OF INSTRUMENT PANEL PARTS - 45-46-48-49000 SERIES

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

a. R and R Instrument Cluster Trim Panels

Left Side

1. Remove headlight knob by pulling out to last detent and depress the spring-loaded latch button on switch, while pulling knob and rod assembly out of switch. Remove headlight switch escutcheon.
2. Remove trim panel, as shown in Figure 120-46.
3. Disconnect sealight wires from panel and remove panel.
4. To install, connect sealight wire on panel and snap panel in position.
5. Replace headlight switch knob and escutcheon.

Right Side

1. Remove radio knobs and escutcheons. If equipped with speed-alert and trip-set, remove cone shaped knobs.
2. Remove trim panel same as left side. See Figure 120-46.



Figure 120-46 Removing Instrument Trim Panels

3. To install, snap panel back in position and replace radio, trip-set, and speed-alert knobs.

b. R and R Speedometer

1. Remove lower instrument filler panel.
2. Place shift lever in "L", and disconnect shift indicator cable on steering column.
3. Remove two screws on speedo face glass. See Figure 120-47.
4. Pull glass out, as shown in Figure 120-48.
5. Remove speedometer by removing three (3) screws marked by arrows in Figure 120-50.
6. Install by replacing speedometer assembly in cluster and replacing three (3) screws.
7. Connect shift indicator cable and adjust, if necessary.
8. Replace lower instrument filler panel.
9. Replace speedo face glass.

c. R and R Printed Circuit

1. Remove lower instrument panel filler.
2. With shift lever in "L", disconnect shift indicator cable on steering column.
3. Remove speedo face glass, as in Figures 120-47 and 120-48.
4. Remove speedometer by removing three screws, as shown in Figure 120-49.



Figure 120-47 Speedo Glass Retaining Screws



Figure 120-48 Removing Speedo Face Glass

5. Disconnect speedo cable on back of cluster.
6. Using needle nose pliers to bend speed-alert and trip-set cable clips, push cables back out of panel.
7. Remove four (4) nuts on printed circuit panel and disconnect wiring harness connector, as shown in Figure 120-50.
8. Remove printed circuit by removing light bulb sockets and fuel gauge clips. See Figure 120-51.
9. Install bulb sockets and fuel gauge clips after replacing printed circuit.
10. To install printed circuit, replace four (4) nuts on panel, connect wiring harness, and connect speedometer, trip-set, and speed-alert cables.
11. Replace speedometer and three (3) screws.

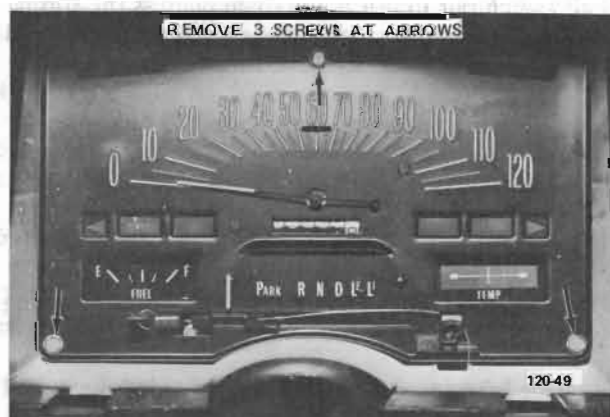


Figure 120-49 Speedometer Retaining Screws

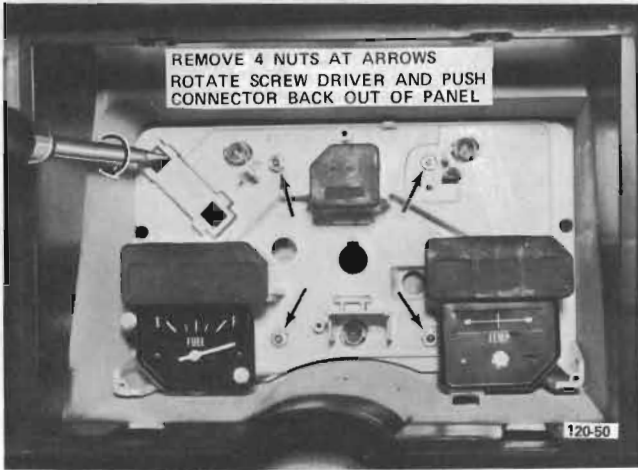


Figure 120-50 Removing Printed Circuit Panel

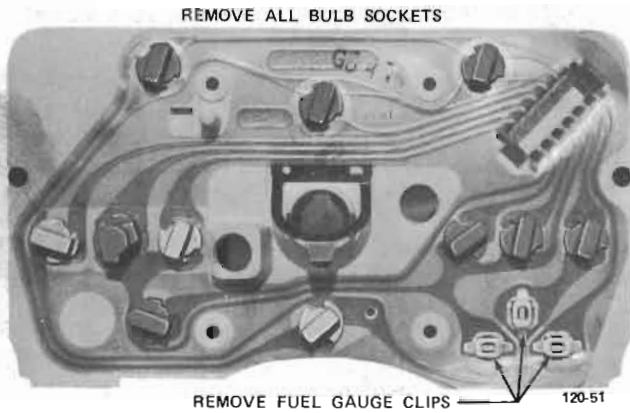


Figure 120-51 Replacing Printed Circuit

12. Hook up shift indicator cable and adjust, if necessary.
13. Replace speedo face glass.

d. R and R Headlight Switch

1. Pull switch out to last notch, then depress the spring-loaded latch button on switch, while pulling knob and rod assembly out of switch. Remove headlight escutcheon.
2. Remove left trim panel. See Figure 120-46.
3. Remove headlight switch retainer nut.
4. Pull Switch down and remove from connector.
5. Plug switch into connector and replace switch retaining nut.
6. Replace left trim panel and headlight switch knob and escutcheon.

e. R and R Fuel Gauge or Temperature Indicator

1. Remove instrument panel lower filler.
2. With shift lever in "L", disconnect shift indicator cable.
3. Remove speedo face glass, as in Figures 120-47 and 120-48.
4. Remove speedometer assembly by removing three (3) screws. See Figure 120-49.
5. Remove fuel gauge by removing two (2) screws, or remove temperature indicator by removing one (1) screw.
6. Install gauge and replace speedometer.
7. Hook up shift indicator cable and adjust, if necessary.
8. Replace lower instrument panel filler.
9. Replace speedo face glass.

f. R and R Windshield Wiper-Washer Instrument Panel Switch

1. Remove headlight switch knob and escutcheon.
2. Remove left trim panel.
3. Remove switch, as shown in Figures 120-52, 120- 53, and 120-54, and remove switch from harness connector.

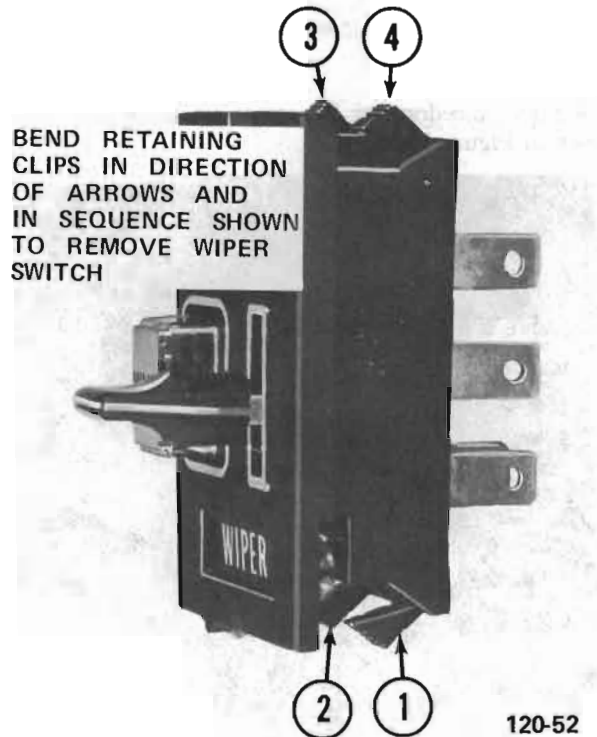


Figure 120-52 Windshield Washer Switch



Figure 120-53 Removing Windshield Wiper Switch



Figure 120-54 Removing Windshield Wiper Switch

4. To install switch, plug switch into connector and replace in panel.

5. Replace left trim panel and headlight switch knob and escutcheon.

g. R and R Accessory Switch

1. Remove headlight switch knob and escutcheon.

2. Remove left trim panel, as shown in Figure 120- 46.

3. Remove accessory switch cover by removing two (2) screws.

4. Remove accessory switch by removing two (2) screws.

5. Replace by installing switch and cover.

6. Replace trim panel and headlight switch knob and escutcheon.

h. Rear Defogger Switch (Wagons With Power Tail Gate and Window)

1. Remove instrument panel cover, as in subparagraph k.

2. Remove accessory switch escutcheon by removing two (2) screws.

3. Remove switch from connector and remove switch.

4. Install switch and escutcheon on instrument panel.

5. Connect switch wires.

6. Replace instrument panel cover.

i. R and R Clock

1. Remove radio knobs and escutcheons and trip- set and speed-alert knobs, if equipped.

2. Remove right trim panel.

3. Remove clock by removing two (2) screws.

4. Remove bulb socket and wire connector.

5. Install bulb socket and wire and replace clock.

6. Replace right trim panel, radio, trip-set, and speed-alert knobs.

j. R and R Trip-Set and Speed-Alert Cables

1. Remove radio knobs and speed-alert and trip- set knobs.

2. Remove right trim panel.

3. Remove cable retaining nut on right panel. See Figure 120-55.

4. Remove lower instrument panel filler.

5. Place shift lever in "L", and disconnect shift indicator cable.

6. Remove speedometer from cluster. See Figure 120- 49.

7. Remove cable by bending retaining clips with needle nose pliers and removing from back of panel.

8. Replace cable by snapping back into panel.

9. Replace cable retaining nut on right panel. Torque nut to 10-12 in.lbs.

10. Replace trim panel and knobs and escutcheons.
11. Replace speedometer in cluster.
12. Hook up shift indicator cable and adjust, if necessary.

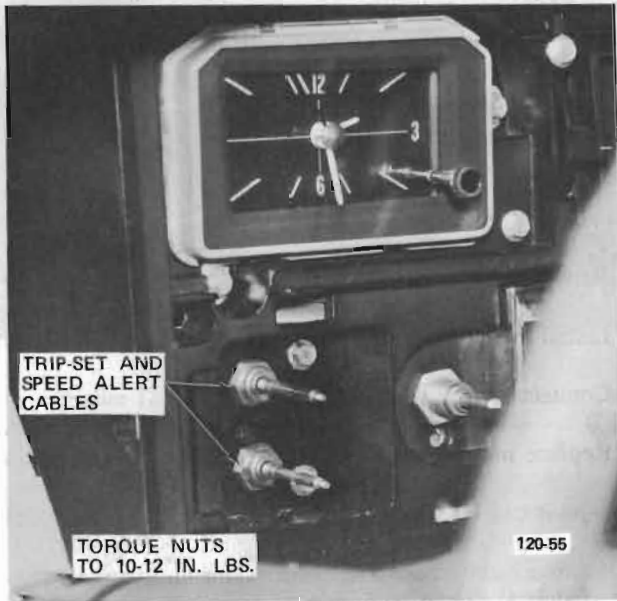


Figure 120-55 Speed-Alert and Trip-Set Cables

13. Replace speedo face glass.

k. R and R Instrument Panel Cover

1. Remove screws holding cover around instrument cluster.
2. Remove two (2) nuts by reaching through top of glove box opening.
3. Disengage clip on right side of cover. See Figures 120-61 and 120-62 for clip locations.
4. Pull cover back from left and center holding clips.
5. Remove radio speakers.
6. Install by replacing radio speakers.
7. Replace cover by hooking clips in place first.
8. Replace screws around cluster and nuts on right side of cover.

l. R and R Shift Indicator Needle

1. Remove lower instrument panel filler.
2. Disconnect shift indicator cable.
3. Remove speedometer face glass.

4. Remove speedometer by removing three (3) screws.
5. Remove cable guide clip from speedo. See Figure 120-56.
6. Slide shift pointer to opening, disconnect return spring.
7. Replace shift pointer and return spring.
8. Replace cable guide clip on speedo.
9. Replace speedometer in cluster.
10. Hook up shift indicator cable and adjust, if necessary.
11. Replace instrument panel lower filler.
12. Replace speedo face glass.



Figure 120-56 Removing Shift Indicator

m. R and R Radio

1. Remove knobs and escutcheons from radio control shafts. If car is equipped with trip-set and speed-alert, unscrew the cone-shaped knobs.
2. Remove right trim panel.
3. Remove the retaining nuts (2) from the threaded portion of the control shaft.
4. Remove ash tray assembly.
5. Separate the two (2) multiple connectors and antenna lead-in before the radio is removed.
6. Unscrew the nuts on the radio support bracket and remove the radio from the opening, lowering it from behind the instrument panel.
7. Install radio by reversing above steps.
8. Trim radio.

n. R and R Front Center Speaker - 45-46-48-49000 Series

1. Disconnect speaker wires from the rear of the radio.

2. Remove two (2) horizontal screws below the instrument panel, four (4) vertical screws on the uppermost horizontal surface of the instrument panel, and three (3) nuts above and inside the glove box.

3. Release three (3) clips located behind the instrument panel, one (1) on the left and two (2) on the right, by grasping the tongue of the clip and pulling forward.

4. Remove the instrument panel cover by pulling outward on the cover.

5. Remove the speaker by removing one (1) screw and slipping the speaker from beneath a side bracket.

6. To install the speaker, reverse the above steps.

o. R and R Front Dual Speaker System - 45-46-48- 49000 Series

1. Disconnect speaker wires from the rear of the radio.

2. Remove two (2) horizontal screws below the instrument panel, four (4) vertical screws on the uppermost horizontal surface of the instrument panel, and three (3) nuts above and inside the glove box. See Figures 1 and 2 for screw and nut location.

3. Release three (3) clips located behind the instrument panel, one (1) on the left and two (2) on the right, by grasping the tongue of the clip and pulling forward.

4. Remove the instrument panel cover by pulling outward on the cover.

5. Remove speakers by removing one (1) screw on each speaker for the 45-46-48000 Series and two (2) nuts on each speaker for the 49000 Series.

6. To install the speakers, reverse the above steps.

p. R and R Horn Relay Buzzer Assembly

1. The horn relay buzzer is found on the steering column

side of the left radio bracket and can be removed by removing screw holding relay to bracket from under instrument panel.

2. Install relay by installing screw and connector.

q. R and R Air Conditioner Outlet Vanes

NOTE: Before removing the A/C vanes, the trim panels, if on the cluster side or the medallion on the right side of the instrument panel, must be removed.

1. Remove A/C outlet vane, as shown in Figure 120- 57 by inserting screwdriver between A/C duct and A/C vane.

2. Rotate screwdriver and pull A/C vane out.

3. To install, A/C vane will snap back into A/C duct.



Figure 120-57 Removing A/C Outlet Vanes

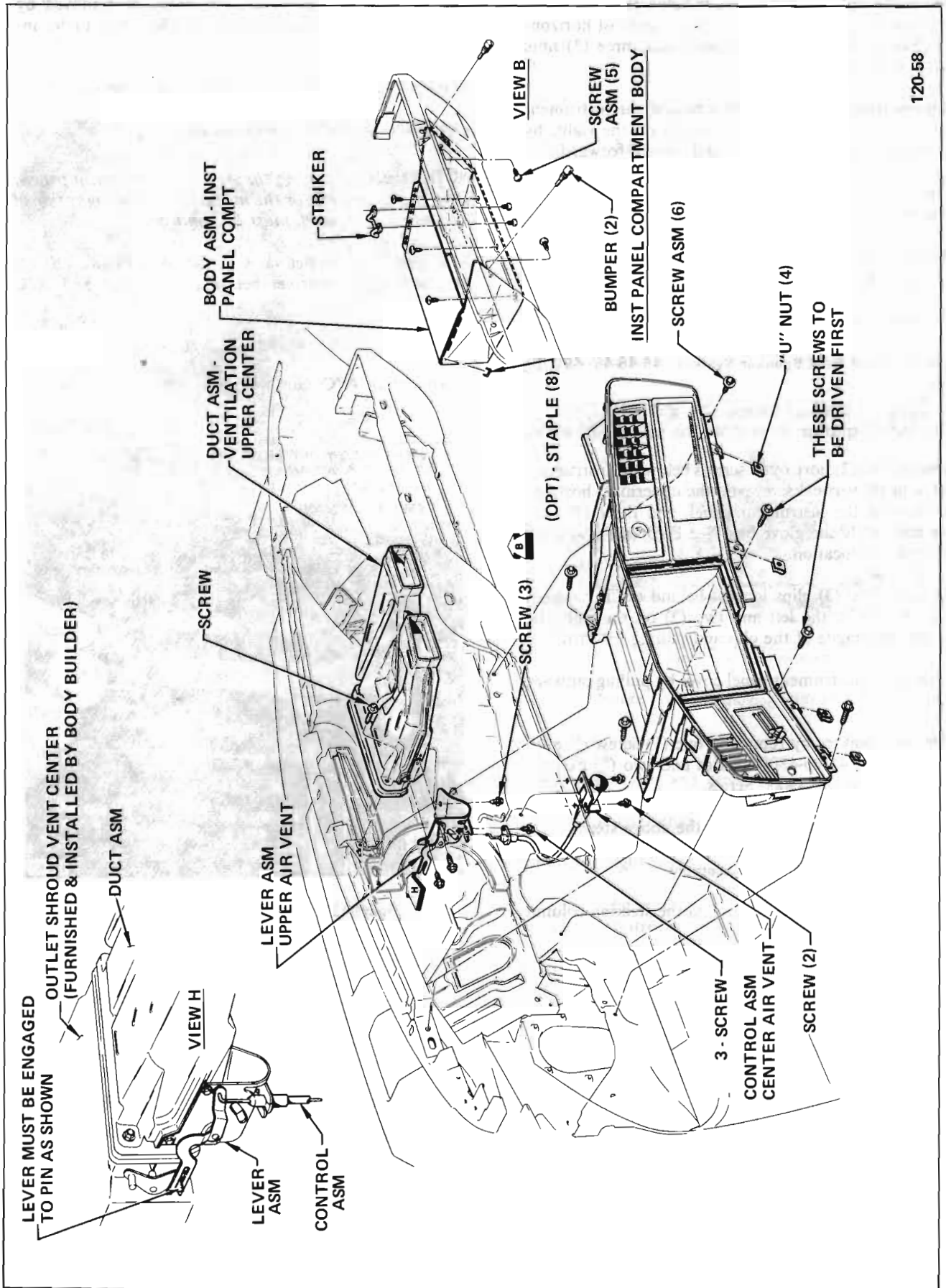
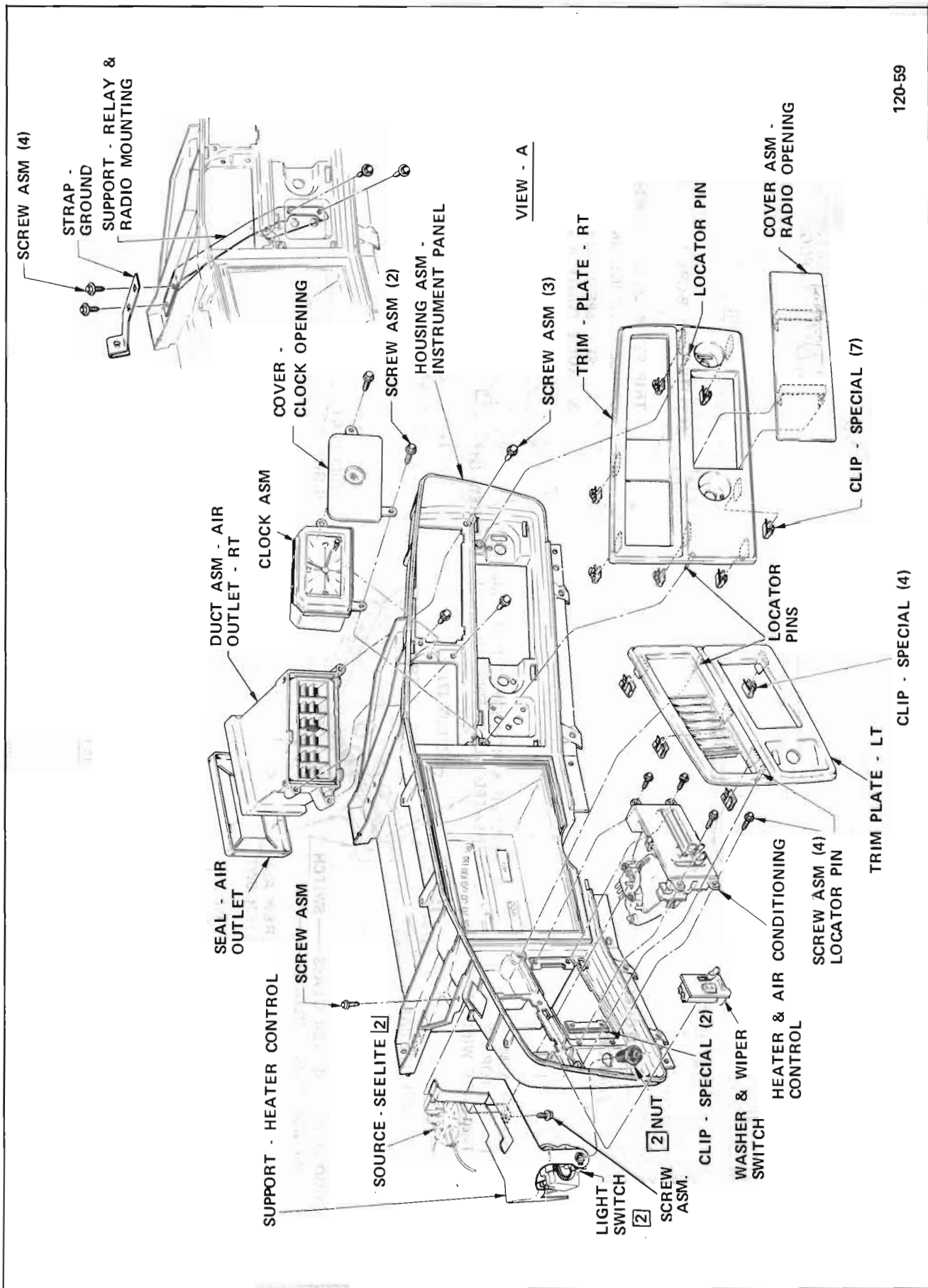
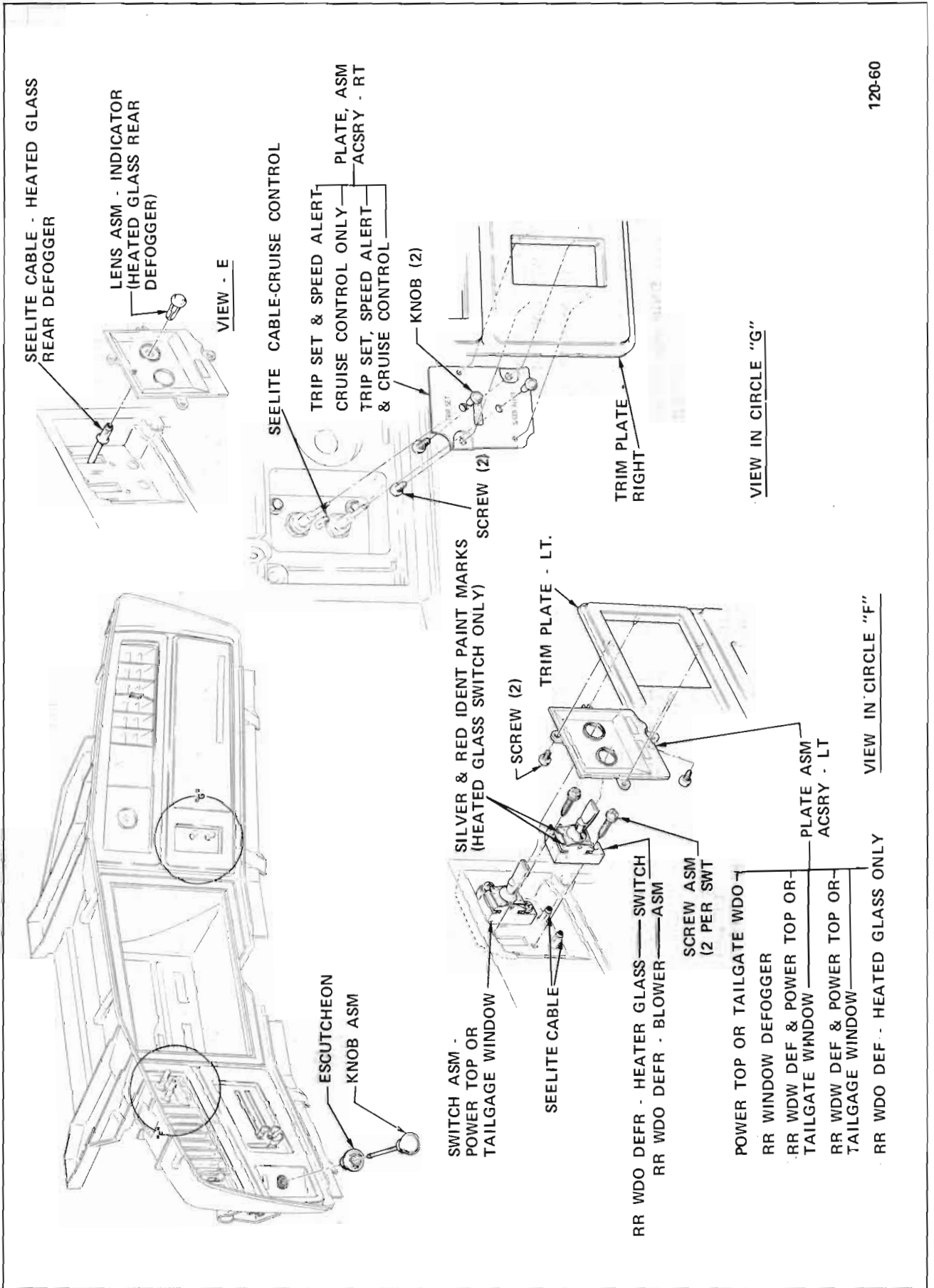


Figure 120-58 Instrument Cluster, Center Duct, and Glove Box - 45-46-48-49000 Series



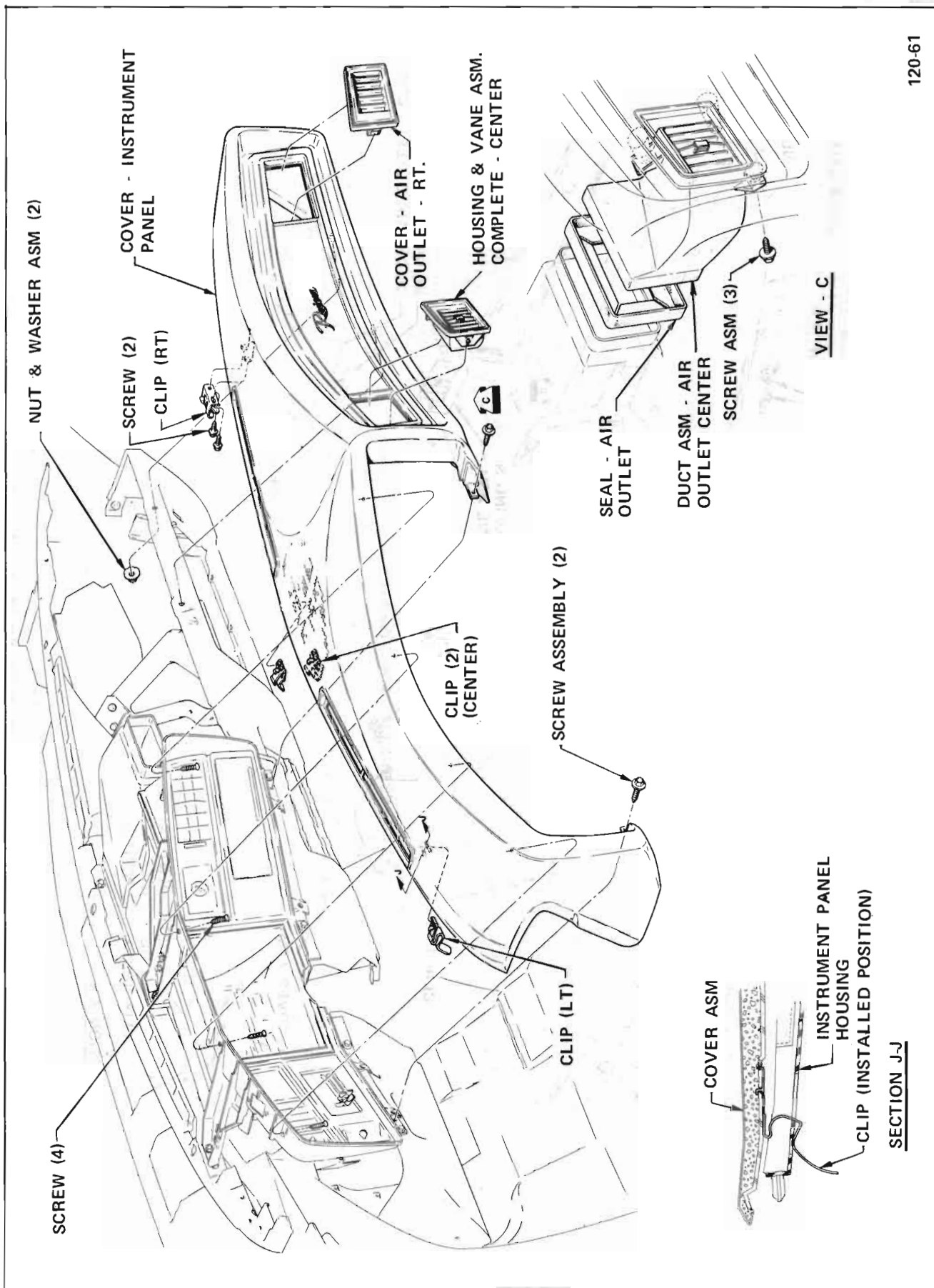
120-59

Figure 120-59 Instrument Panel Cluster - 45-46-48-49000 Series



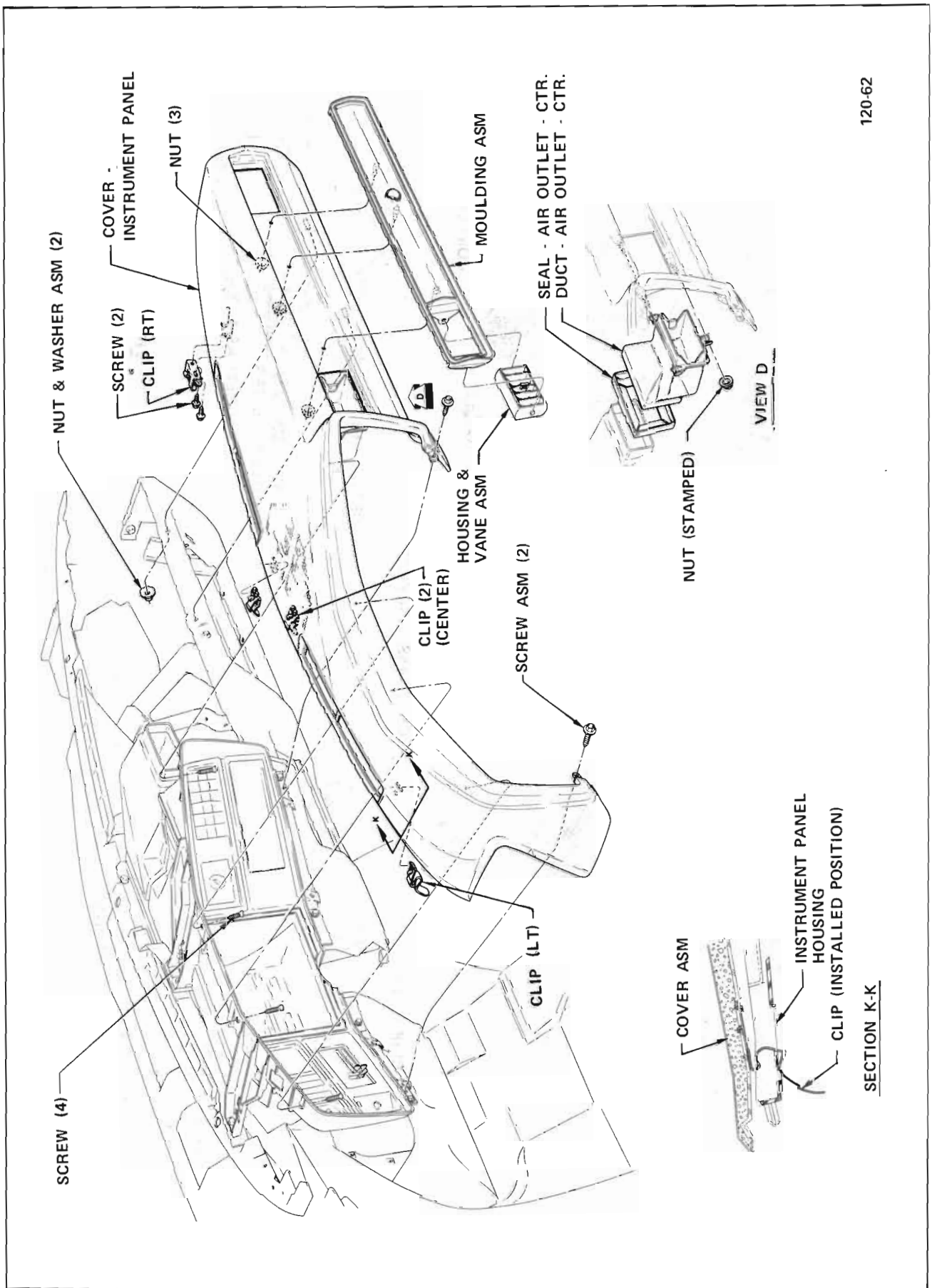
120-60

Figure 120-60 Instrument Panel Accessory Plates and Switches - 45-46-48-49000 Series



120-61

Figure 120-61 Instrument Panel Cover - 45-46-48000 Series



120-62

Figure 120-62 Instrument Panel Cover - 49000 Series

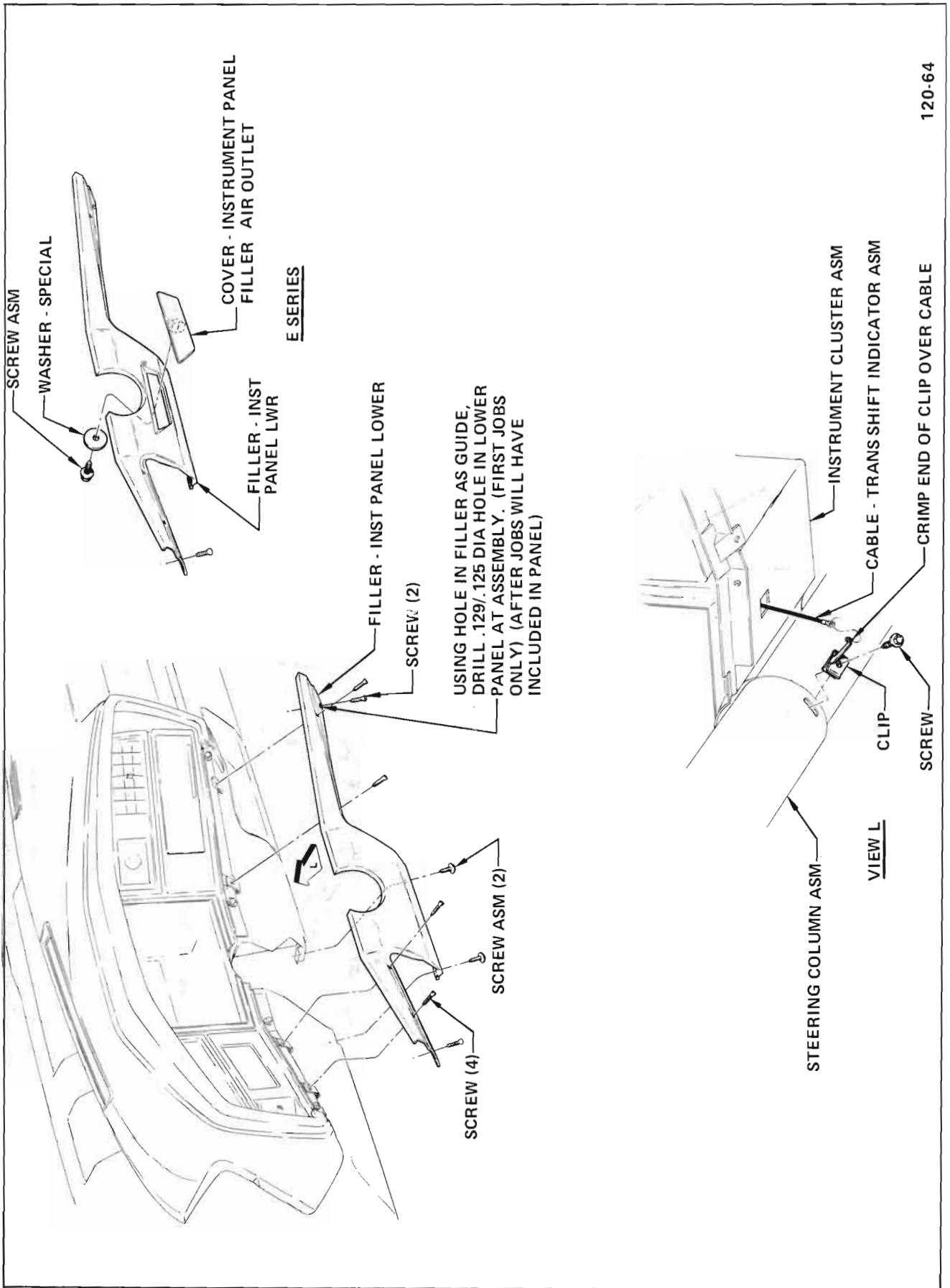


Figure 120-64 Instrument Panel Filler Plate - 45-46-48-49000 Series

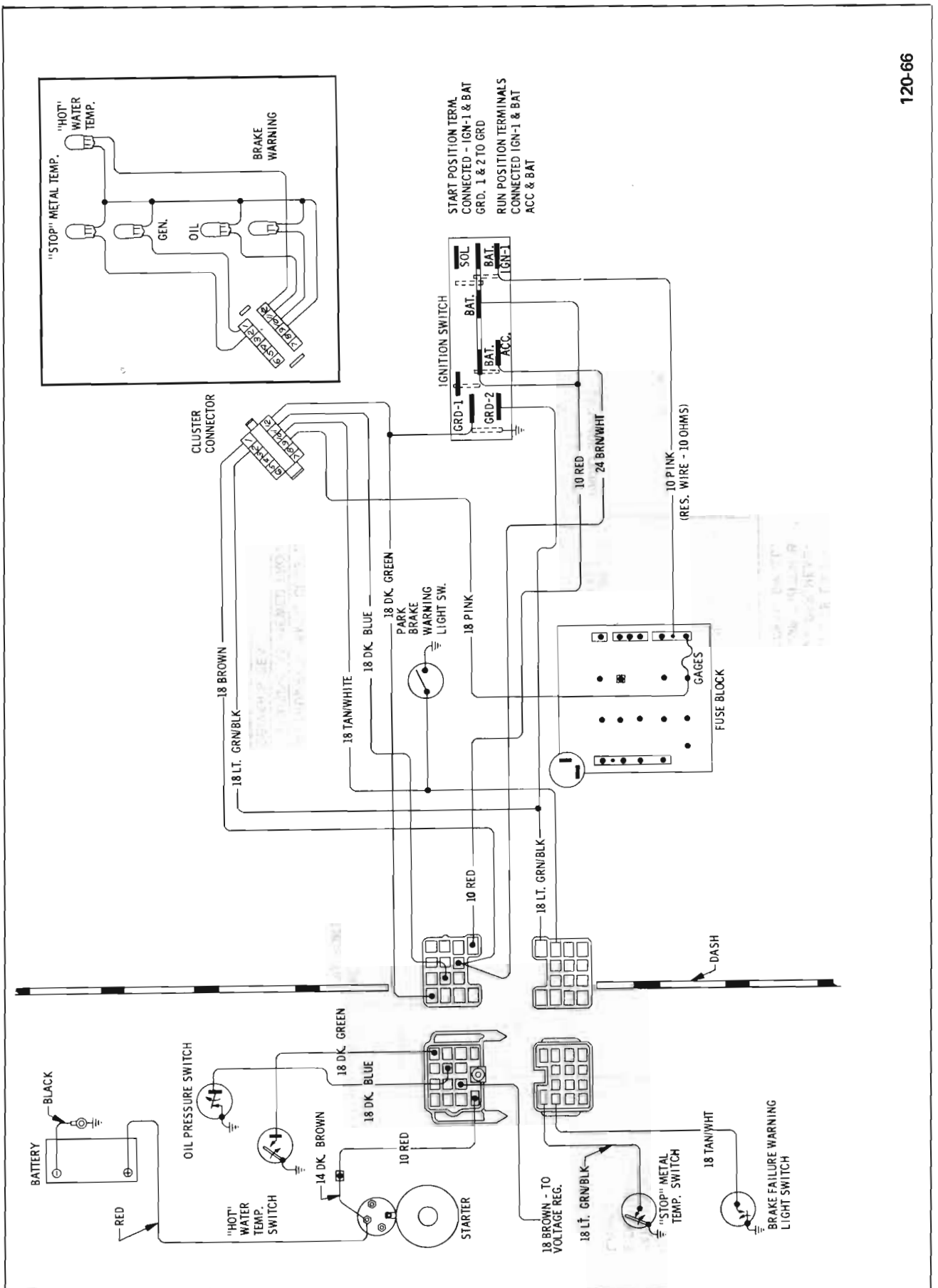


Figure 120-66 Instrument Panel Indicator Light - 45-46-48-49000 Series