SECTION B

LIGHTING SYSTEMS

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DIVISION I SPECIFICATIONS AND ADJUSTMENTS

120-9 LIGHTING SYSTEM SPECIFICATIONS

a. Lamps, Switches, Wiring

Headlamp Make and Type	Guide, Dual T-3 Sealed Beam
Headlamp Lens Diameter	5¾"
Tail, Stop, Parking, Signal Lamps, Make	Guide
Lighting Switch, Make	Delco-Remy
Wiring Circuit Type	Single Wire
Wiring Circuit Protection for Head and Front Parking Lights	Thermo Circuit Breaker
Thermo Circuit Breaker Location	In Lighting Switch
Thermo Circuit Breaker Calibration @ 75° F.	
Stay Closed Indefinitely @ Amps	15
Open Within 60 Seconds @ Amps	26

b. Fuses & Circuit Breakers (See Figure 120-9 or 10)

c. Lamp Bulbs (See Figure 120-9 or 10)

DIVISION II DESCRIPTION AND OPERATION

120-10 HEADLIGHTS AND CONTROLS

a. Description of Lighting Switch

The switch uses a multiple push-on type connector. It is a "push-pull" type which also incorporates a manually operated rheostat for controlling the intensity of the instrument panel lights, and a detent position which completes the dome light circuit. Three "push-pull" positions of the switch knob provide control of the exterior lights as follows: 1. *Off position* (knob all the way in) cuts off all lights controlled by the switch.

2. *Parking position* (knob pulled out to first notch) turns on the parking lights, tail lights, and license light and side marker lights. The instrument panel lights also will be turned on if the rheostat is set for these lights.

3. *Driving position* (knob pulled out to last notch) turns headlights on, while the other lights remain as in

LAMPS

WHERE USED	LAMP NO.	NO. USED	CANDLE POWER	MODEL
FRONT				
HEADLAMP - 5-3/4 DIA. TYPE 1	4001	2	37.5	ALL
HEADLAMP - 5-3/4 DIA. TYPE 2	4002-L	2	37.5-55W	ALL
HEADLAMP - 5-3/4 DIA. TYPE 2 (EXPORT)	4.00	2	37.5-55W	ALL
PARK & DIR. SIGNAL LAMP	1157NA	2	32 & 3	ALL
SIDE MARKER LAMP	194	2	2	ALL
SPOTLAMP	4404	1	30W	ALL
REAR				
TAIL, STOP & DIR. SIGNAL LAMP	1157	4	32 & 3	ALL EXCEPT WAGONS
TAIL, STOP & DIR. SIGNAL LAMP	1157	2	32 & 3	WAGONS ONLY
BACK-UP LAMP	1157	2	32 & 3	ALL EXCEPT WAGONS
BACK-UP LAMP	1156	2	32	WAGONS ONLY
LICENSE LAMP	97	1	4	ALL
SIDE MARKER LAMP	194	2	2	ALL
LUGGAGE COMPARTMENT	89	1	6	ALL EXCEPT WAGONS
INSTRUMENT PANEL				
INDIRECT LAMP (SPEEDO)	194	2	2	ALL
INDIRECT LAMP (GAGES CLUSTER)	194	3	2	ALL
CLOCK OR TACHOMETER	1893	2	2	ALL
INDIRECT LAMP (INDICATOR CLUSTER)	194	2	2	ALL
INDICATORS				
HEADLAMP HI BEAM	194	1	2	ALL
DIRECTIONAL SIGNAL	194	2	2	ALL
OIL PRESSURE	194	1	2	ALL
WATER TEMPERATURE	194	1	2	ALL
GENERATOR CHARGE	194	1	2	ALL
BRAKE WARNING	194	1	2	ALL
TAPE PLAYER	2182 D	1	.3	ALL
CRUISE CONTROL	181	1	3	ALL
SERVICE ILLUMINATION				
GLOVE COMPARTMENT LAMP	1893	1	2	ALL
RADIO DIAL	1881	1	2	ALL
ASH TRAY ASSEMBLY	1445	1	.5	ALL
HEATER & VENT CONTROLS	1893	2	2	ALL
TROUBLE LAMP	1004	1	15	ALL
CLIMATE CONTROLS (A/C)	53	2	1	ALL

LAMPS

WHERE USED	LAMP NO.	NO. USED	CANDLE POWER	MODEL
INTERIOR ILLUMINATION				
DOME - ROOF CENTER (OPT. WITH J414U35)	211-1	1	15	ALL
DOME - ROOF CENTER (OPT. WITH J422525)	211	1	15	ALL
COURTESY - RT. & LT. SAIL PANELS (OPT. WITH J414U47)	212-1	2	6	SKYLARK COUPES ONLY
COURTESY-RT. & LT. SAIL PANELS (OPT. WITH J423117)	212	2	6	SKYLARK COUPES ONLY
COURTESY - LAMP INST. PANEL	89	2	6	ALL
MIRROR MAP LAMP	563	1	4	ALL
FLASHER DIR. SIGNAL (OPT. WITH 3836371)		1		ALL EXCEPT WAGONS
FLASHER DIR. SIGNAL (OPT. WITH 3836361)		1		ALL EXCEPT WAGONS
FLASHER DIR. SIGNAL (OPT. WITH 3836331)		1		WAGONS ONLY
FLASHER DIR. SIGNAL (OPT. WITH 3836381)		1		WAGONS ONLY
FLASHER HAZARD (OPT. WITH 1501303)		1		ALL
FLASHER HAZARD (OPT. WITH 3885794)		1		ALL

FUSES

COLOR CODE	WHERE USED	AMP.	LENGTH
PLAIN	CLOCK, LIGHTER, COURTESY, GLOVE BOX, DOME & TRUNK LIGHT	20	1-1/4
PLAIN	TAIL, LICENSE, PANEL ILL., SIDE MARKER & PARK LAMPS	20	1-1/4
PLAIN	STOP AND HAZARD LAMPS	20	1-1/4
PLAIN	INSTRUMENT LAMPS	4	5/8
PLAIN WHITE	WIPER	25	1-1/4
PLAIN WHITE	HEATER & A/C BLOWER & COMPRESSOR CLUTCH	25	1-1/4
PLAIN RED	RADIO ANTENNA, POWER WINDOW RELAY, TRANS. SOLENOID & MIRROR MAP LAMP	10	1-1/4
PLAIN	DIRECTIONAL SIGNAL & BACK-UP CRUISE, REAR DEFOGGER	20	1-1/4
PLAIN RED	GAGES & INDICATOR LAMPS	10	1-1/4
LT. BLUE	UPPER LEVEL VENT FAN (TO REPLACE EXISTING RADIO FUSE, USED ONLY, WHEN THIS OPTION IS SPECIFIED ALONG WITH POWER ANTENNA)	15	1-1/4
PLAIN	CARBURETOR SOLENOID (L-6 ENGINE) VACUUM SOLENOID (L-6 & 455 ENGINE) (INLINE FUSE)	4	5/8

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Figure 120-9 Light Bulb and Fuse Chart 43-44000 Series

LAMPS

PART NUMBER	WHERE USED	LAMP NO.	NO. USED	CANDLE POWER	MODEL
	FRONT				
5956001	HEADLAMP - 5-3/4 DIA. TYPE 1	4001	2	37.5W	ALL
5956002	HEADLAMP - 5-3/4 DIA. TYPE 2	4002-1	2	37.5-55W	ALL
5948928	HEADLAMP - 5-3/4 DIA. TYPE 2 (EXPORT)	4003	2	37.5-55W	ALL
9428904	PARK & DIR. SIGNAL LAMP	1157 NA	2	32 & 3	ALL
9428554	CORNERING LAMP	1295	2	50	94
1930370	CORNERING LAMP	1195	2	50	52-64-82
9423330	SIDE MARKER LAMP	194	2	2	[1]
9427942	SIDE MARKER LAMP	194A	2	2	94 WITH CORN. LP.
274331	SPOTLAMP	4434	1	30W	52-64-82
	REAR				
9428902	REAR TAIL, STOP & DIR. SIG. LAMP	1157	6	32 & 3	52-64-94 LESS "B" WAG.
9428902	REAR TAIL, STOP & DIR. SIG. LAMP	1157	4	32 & 3	82
9428902	REAR TAIL, STOP & DIR. SIG. LAMP	1157	2	32 & 3	"B" - WAGON
9428902	BACK-UP LAMP	1157	2	32 & 3	52-94 LESS "B" WAGON
9428902	BACK-UP LAMP	1157	4	32 & 3	94
9417866	BACK-UP LAMP	1156	2	32	82 & "B" WAGON
9421777	LICENSE LAMP	97	1	4	ALL
9421330	SIDE MARKER LAMP	194	2	2	ALL LESS "B" WAGON
142452	LUGGAGE COMPARTMENT	89	1	6	ALL LESS "B" WAGON
9421330	BACK-UP LAMP (TAIL INDICATION)	194	2	2	82
	INSTRUMENT PANEL				
9421330	INDIRECT INSTRUMENT LAMP	194	5	2	ALL
9416927	CLOCK	1893	2	2	ALL
274004	INSTRUMENT PANEL (WIPER & LIGHTS)	1445	2	.5	94
9427984	ACCESSORY SWITCHES (SEE LITE LAMP SOURCE)	181	1	3	52-64-82
274004	COURTESY LIGHT SWITCH & ACC. SWITCHES	1445	2	.5	94
9427984	INSTRUMENT PANEL (WIPER & LIGHTS) (SEE-LITE LAMP SOURCE)	161	1	3	52-64-82
	INDICATORS				
9421330	HEADLAMP HI BEAM	194	1	2	ALL
9421330	DIRECTIONAL SIGNAL	194	2	2	ALL
9421330	OIL PRESSURE	194	1	2	ALL
9421330	WATER TEMPERATURE	194	1	2	ALL
9412348	CYLINDER HEAD TEMPERATURE	257	1	2	64-82-94
9421330	GENERATOR CHARGE	194	1	2	ALL
9421330	BRAKE WARNING	194	1	2	ALL
9427964	CRUISE CONTROL	181	1	3	ALL
7296865	RADIO (STEREO INDICATOR)	2N2D	1	.3	ALL
7296866	TAPE PLAYER	2N2D	1	.3	ALL
9427984	REAR WINDOW DEFOGGER (HEATED GLASS)	161	1	3	94
	SERVICE ILLUMINATION				
9416927	GLOVE COMPARTMENT LAMP	1893	1	2	ALL
274020	RADIO DIAL	1893	1	2	ALL
274004	ASH TRAY ASSEMBLY	1445	1	.5	52-64-82
274004	ASH TRAY ASSEMBLY	1445	2	.5	94
1312D2	HEATER CONTROL, CLIMATE CONTROL, & AUTO. CLIMATE CONTROL	53	2	1	ALL
455126	TROUBLE LAMP	1004	1	15	ALL

LAMPS

PART NUMBER	WHERE USED	LAMP NO.	NO. USED	CANDLE POWER	MODEL
	INTERIOR ILLUMINATION				
9414045	DOME-ROOF CENTER (OPT. WITH 9422525)	211	1	12	52-64 [2]
9422525	DOME-ROOF CENTER (OPT. WITH 9414045)	211-1	1	12	52-64 [2]
142453	REAR ARM REST (CONVERTIBLE)	89	2	6	52-64-82
9414049	COURTESY LIGHT - SAIL PANEL (OPT. WITH 9423117)	212	2	6	82-94
9423117	COURTESY LIGHT - SAIL PANEL (OPT. WITH 9414049)	212-1	2	6	82-94
9423117	COURTESY LIGHT-INTERIOR TAILGATE (OPT. WITH 9414049)	212-1	1	6	"B" WAGON
9414049	COURTESY LIGHT-INTERIOR TAILGATE (OPT. WITH 9423117)	212	1	6	"B" WAGON
142452	COURTESY LIGHT - INSTRUMENT PANEL	89	2	6	ALL
142453	CENTER CONSOLE - REAR	89	1	6	94
583636	FLASHER DIRECTIONAL SIGNAL (OPT. WITH 583637)		1		ALL LESS "B" WAGON
583637	FLASHER DIRECTIONAL SIGNAL (OPT. WITH 583636)		1		ALL LESS "B" WAGON
583638	FLASHER DIRECTIONAL SIGNAL (OPT. WITH 583637)		1		"B" WAGON
583637	FLASHER DIRECTIONAL SIGNAL (OPT. WITH 583638)		1		"B" WAGON
3883734	FLASHER HAZARD (OPT. WITH 1381503)		1		ALL
1381503	FLASHER HAZARD (OPT. WITH 3883734)		1		ALL
9423429	MIRROR MAP LAMP	563	1	4	ALL

FUSES

G.M. PART NUMBER	COLOR CODE	WHERE USED	AMP.	LENGTH
106653	PLAIN	CLOCK, LIGHTER, COURTESY GLOVE BOX, DOME & TRUNK LIGHT & DECK LID RELEASE	20	1-1/4
106653	PLAIN	TAIL CORNERING, LICENSE, PANEL ILL., SIDE MARKER, PARK LAMPS & SWITCH ILL.	20	1-1/4
106653	PLAIN	STOP & HAZARD LAMPS	20	1-1/4
147632	PLAIN	INSTRUMENT LAMPS	4	5/8
455844 9426332	PLAIN WHITE	WIPER	25	1-1/4
455844 9426332	PLAIN WHITE	HEATER & A/C BLOWER & COMPRESSOR CLUTCH	25	1-1/4
117142 9426334	PLAIN RED	RADIO ANTENNA, POWER WINDOW RELAY, TRANS SOLENOID & MIRROR MAP LAMP	10	1-1/4
106653	PLAIN	DIRECTIONAL SIGNAL & BACK-UP CRUISE, REAR DEFOGGER & VACUUM SOLENOID	20	1-1/4
117142 9426334	PLAIN RED	GAGES & INDICATOR LAMPS & FUEL PUMP ON "E" SERIES ONLY	10	1-1/4
117142 9426334	PLAIN RED	FUEL PUMP "E" SERIES ONLY	10	1-1/4
147682	PLAIN	REAR WINDOW DEFOGGER (INLINE FUSE IN REAR LUGGAGE COMPT.) HEATED GLASS ONLY ("E" ONLY)	4	5/8
9426333	LT. BLUE	UPPER LEVEL VENT FAN (TO REPLACE EXISTING RADIO FUSE. ONLY USED WHEN THIS OPTION IS SPECIFIED ALONG WITH POWER ANTENNA) ("B-C" SERIES ONLY)	15	1-1/4

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Figure 120-10 Light Bulb and Fuse Chart - 45-46-48-49000 Series

the parking position. The headlights will be on the upper or lower beams depending on the position of the separate dimmer switch.

In the parking and driving positions, the instrument panel lights are controlled by rotating the light switch knob. With the knob turned counterclockwise, these lights are on maximum brightness. As the knob is turned clockwise, they gradually dim until they are off at the full clockwise position of the knob.

4. *Dome light position* (knob turned fully counterclockwise) turns the dome and courtesy lights on. These lights can be turned on regardless of the in-or-out position of the switch.

b. Description of Thermo Circuit Breaker

A thermo circuit breaker is incorporated in the lighting switch assembly, to protect wiring from damage due to short circuits in the headlight circuits only.

The thermo circuit breaker consists of a bi- metal blade and set of contact points connected in series with the lighting circuits. An abnormal flow of current through the circuit breaker, such as would be caused by a short circuit in a lighting circuit, heats the bi-metal blade sufficiently to separate the points and cause them to vibrate. The vibrating blade alternately opens and closes the circuit, thus reducing the flow of current and protecting the wiring against overheating and burning. The flickering light produced by the vibrating circuit breaker serves as a warning to the operator of vehicle that a short circuit exists.

c. Test of Lighting Switch

If the lighting switch is suspected of being faulty, the contacts can be tested by connecting a low reading voltmeter between the wire supplying current to the contact and the wire conducting current away. This must be done with the switch in a position where the contact under test is closed.

1. To check the switch contact for the headlights, pull switch knob out to last notch and also make sure dimmer switch is in upper beam position. Connect voltmeter prods between battery and headlight terminals of switch (between red and light blue wires). If voltage loss through switch contacts if over .2 volt, switch must be replaced.

2. To check the contact for the tail and front parking lights, connect voltmeter between tail lights and tail light fuse terminals (between the brown wire and the brown with white stripe wire). If voltage loss is over .1 volt, switch must be replaced.

d. Replacement of Lighting Switch

1. Disconnect battery to ground cable to avoid a possible short circuit.

2. Pull switch knob out to last notch, then depress the spring loaded latch button on switch, while pulling knob and rod assembly out of switch.

NOTE: *If latch button is depressed before switch knob is pulled out, knob and rod assembly will not release.*

3. Remove switch escutcheon. Remove switch from cluster assembly.

4. Unplug multiple connector from lighting switch.

5. Install switch in reverse order of above steps, making sure that switch alignment tang engages slot in cluster and ground plate before tightening escutcheon.

6. Reconnect battery ground cable.

e. Test of Light Switch Thermo Circuit Breaker

To test the thermo circuit breaker, remove lighting switch from instrument panel to avoid possible damage to adjacent instruments.

Since the current required to open the circuit breaker contacts depends somewhat on outside temperature, the circuit breaker should be tested at normal temperature (70° to 80°F.)

1. Connect an ammeter and a carbon-pile rheostat in series with the battery terminal of lighting switch and positive terminal of a 12-volt battery, and set rheostat to provide maximum resistance. Rheostat must have capacity for 50 amperes and be adjustable down to .3 ohms.

2. With switch on, connect the headlight terminal of lighting switch and the negative post of battery.

3. Adjust rheostat to give 26 amperes. The circuit breaker should open within 60 seconds.

4. Adjust rheostat to give 15 amperes on ammeter. The circuit breaker should remain closed indefinitely at 15 amperes.

5. If circuit breaker does not operate as specified the lighting switch assembly must be replaced since internal repairs connot be made.

f. Dual Headlamp Assembly

A dual headlamp system is standard equipment on all series and consists of two dual headlamp assemblies, one mounted on each side of the car.

Each dual headlamp includes two 5-3/4" T-3 sealed beam units mounted in a single housing enclosed by headlamp doors. The inboard unit is used for bright lights only and has a single filament. The outboard unit is used for both high and low beams and has two filaments. For identification, the inboard unit is marked "1", the outboard unit is marked "2".

When the dimmer switch is in the dim or lower beam position only, the outboard unit of each dual headlamp is on. Both outboard and inboard units of each headlamp are on when the dimmer switch is in the bright or high beam position.

The T-3 sealed beam unit has three projections equally spaced around the perimeter of the lens. These prejections are ground off at the factory to provide a mounting surface for aiming devices. These aiming devices are used without having headlights on.

g. Dimmer Switch

The driver may select the upper or lower headlight beam as traffic and road conditions demand by operating the dimmer switch mounted on the toe panel in a convenient position for the left foot.

The dimmer switch opens and closes the circuits to the upper and lower lamp filaments in the sealed beam units, thereby alternately raising and lowering the headlight beams with each successive operation of the switch. Depression of switch button turns the rotary contact one position within the switch. The spring-loaded button automatically returns to the reset position when released.

The wiring connection to the dimmer switch is made by a multiple connector. The dimmer switch is mounted on the inner side of the toe pan, so the switch, connector and wiring are all inside the car.

h. Headlight Beam Indicator

Whenever the upper headlight beams are lighted, a beam indicator bulb in the instrument cluster also lights, producing a small spot of red light in front of the driver. *For safety reasons, never pass an approaching car with the beam indicator showing red.*

120-11 NEUTRAL START SWITCH AND EXTERIOR LIGHTS

NOTE: *See Figure 120-9 or 10 for lamp bulb and fuse specifications.*

a. Front Parking and Signal Lights

Each front parking and signal lamp contains one 32-3 CP lamp bulb which provides a 3 CP parking light and a separate 32 CP direction signal light. The pins on lamp bulb and slots in socket are offset to prevent improper installation of bulb in socket. The parking light is controlled by the lighting switch and the circuit is protected by the "TAIL" fuse. The turn signal light is separately controlled by the signal switch and the circuit is protected by a fuse on the fuse block under the instrument panel. All front turn signal bulbs have natural amber glass (not painted) and are lighted whenever the light switch is in either the parking light or driving light position.

b. Tail, Stop, and Signal Lights

Each rear lamp assembly contains a 32-3 CP bulb which is used as a combination tail, stop and direction signal light. The tail lights are controlled by the lighting switch and the circuit is protected by a fuse on the fuse block.

The stop lights are controlled by a mechanical switch mounted on the brake pedal bracket. This spring loaded switch makes contact whenever the brake pedal is applied. When the brake pedal is released, it depresses the switch plunger to open the contacts and turn the brake lights off.

The direction signal switch is in the circuit, so the stop lights may be flashing or constant depending on the position of the switch. The stop light circuit is protected by a fuse mounted on the fuse block.

The combination tail, stop and directional signal lamp bulb sockets are "twist lock" sockets and can be snapped out from inside the trunk compartment on Electras. On LeSabres and Wildcats the bulb sockets can be removed from beneath bumper. Since the position of the bulb filaments is important in the rear lamps, these sockets have been provided with a tongue and groove index to insure correct positioning. To change the bulb on the Special and Station Wagon it is necessary to remove the lamp lens. To change bulb on Riviera, remove filler plate in rear compartment.

c. Rear License Lights

The rear license lamp is mounted above the license plate to provide adequate lighting of the plate. The lamp contains one 4 CP lamp bulb which operates in conjunction with the tail lights, and its circuit is also protected by the fuse on the fuse block.

The lamp bulb may be replaced by removing the lamp lens.

d. Side Marker Lights.

Four side marker lights are illuminated whenever the light switch is in either the parking light or driving light position. The side marker light circuit is protected by the "TAIL" fuse. The side marker light uses a "twist lock" bulb socket. Rotating the socket assembly counterclockwise will remove it. Replace bulb and reinstall the assembly by rotating it clockwise.

e. Back-Up Lamps and Neutral-Start Switch

On manual transmission cars, the back-up light switch is mounted on the upper side of the steering column mast jacket in approximately the same location as the combined neutral start back-up light switch on automatic transmission cars. The manual back-up light switch has a tang that fits into a slot in the shift tube. When the transmission is shifted into reverse, the shift tube rotates moving the tang to the left, closing the back-up switch contacts.

To check for proper operation of the back-up light switch, turn on the ignition switch, place the shift lever in reverse, and make sure the back-up lights are lit. Then place the shift lever in neutral and make sure the back-up lights are out. Next place

the shift lever in second gear and make sure the lights are *not* lit. The switch mounting screw holes are slotted slightly, allowing some adjustment if necessary.

On all column shift automatic transmission cars, the back-up light switch is combined with the neutral start switch. It is mounted on the steering column under the instrument panel. The switch is actuated by the transmission control shaft.

On cars with automatic transmission and console shift, the back-up light switch is combined with the neutral start switch. The switch is actuated by the transmission shift bracket assembly in the console.

When the neutral start portion of the switch is correctly timed, the back-up portion is properly timed automatically. Slotted mounting screw holes permit sidewise movement of the switch for proper timing.

The back-up light circuit is protected by a fuse on the fuse block.

f. Clutch Start Switch

A clutch start switch is installed in all manual transmission cars. This switch is located on the clutch pedal bracket. See Figure 120-10A.

When the clutch pedal is released, the clutch start switch is open; when the clutch pedal is depressed, the clutch start switch is closed. Since the switch is connected in series in the solenoid circuit between the ignition switch and the starter solenoid, this means that the engine cannot be started unless the clutch pedal is depressed.

The purpose of the clutch start switch is to prevent the engine from starting under conditions where such starting could cause an accident. For instance, if an engine were started with the transmission in low or reverse gear and with the clutch pedal released, the car would immediately move. If any object or person were near, damage would result.

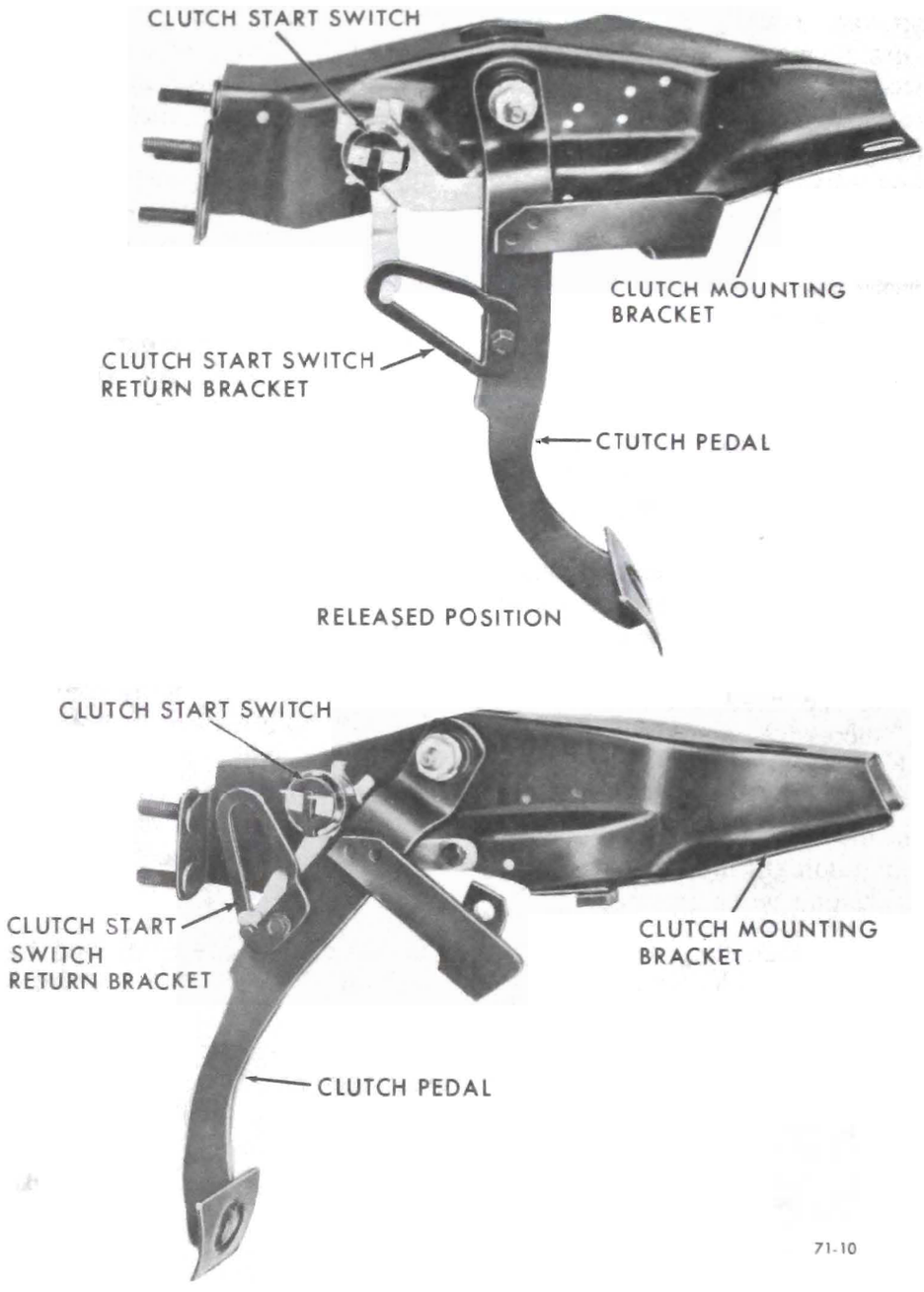

Figure 120-10A - Clutch Start Switch

120-12 INTERIOR LIGHTS AND CIGAR LIGHTERS

NOTE: *See Figure 120-9 or 10 for lamp bulb and fuse specifications.*

a. Instrument Panel Lights

The speedometer, heater-defroster controls, ventilator or air conditioner controls, transmission control dial, clock and ash tray are illuminated by lamp bulbs mounted to provide indirect lighting.

The instrument panel lights are controlled by the lighting switch as described in paragraph 120-10 and the circuits are protected by the 4 ampere fuse on the fuse block.

To replace an instrument cluster bulb, remove the socket and bulb assembly from the instrument cluster by rotating counterclockwise. Replace the bulb and reinstall the assembly by rotating it clockwise.

b. Brake Warning Light

The brake warning light functions as

a check on three possible brake troubles. If the parking brake is left on while the car is driven, the brake warning light is lit; or, if hydraulic pressure becomes low in either front or rear half of the dual brake system, the light will light during brake application. The third use will show any electrical malfunction of the wheel lock control system if the car is so equipped.

1. *The parking brake warning light circuit* will light a red "BRAKE" signal light in the instrument cluster whenever the ignition switch is turned on with the parking brake applied. This curcuit is grounded at a plunger type switch operated by the parking brake lever.

When the parking brake lever is in the fully released position, the switch plunger must be depressed 3/16 inch to make sure the circuit is open. Adjust by loosening the mounting screw and shifting the switch as necessary at the slotted screw hole.

2. *The brake failure warning light circuit* uses the same red "BRAKE" signal light in the instrument cluster to warn that either the front or the rear half of the dual brake system has lost hydraulic pressure and is failing to provide effective braking.

The switch to operate the brake failure warning light is in a simple spring-centered balance valve subjected to front brake line pressure on one side and rear brake line pressure on the other side. See Figure 120-11.

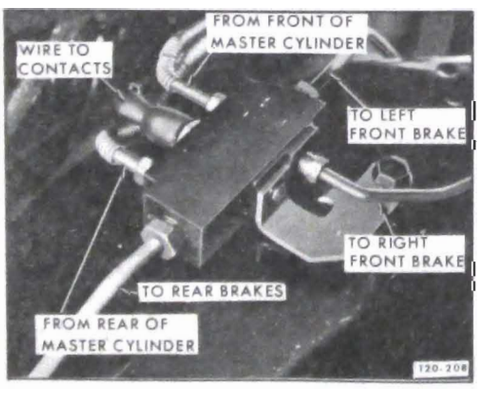

Figure 120-11 Distributor and Brake Failure Warning Switch Assembly

A difference of 150 psi between these pressures, as will occur if one system fails, causes the valve to move from center and to contact an electrode which grounds the brake warning light.

To check the complete system, both hydraulically and electrically, proceed as follows:

(a) With ignition switch on, have helper hold foot pressure on brake pedal while watching brake warning light.

(b) Hold a rag under front master cylinder fitting to catch brake fluid lost, then crack front brake line fitting. When brake warning light lights, tighten fitting before helper releases brake pedal to avoid any possibility of drawing air into the brake system.

(c) Repeat step (b) at *rear* master cylinder fitting to check operation of brake failure warning light from rear half of car brake system.

Since this check causes a loss of brake fluid, always check fluid level of both reservoirs after checking operation of the brake failure warning light. Add fluid as required to bring level within 1/8 inch of lip of each reservoir.

c. Direction Signal Indicator Lights

The direction signal indicator consists of a 1 or 2 CP bulb mounted at each end of the instrument cluster. See Figure 120-9 or 10.

d. Automatic Transmission Control Dial Light

The control dial in the instrument panel is illuminated by a 2 CP lamp bulb mounted in the cluster to provide indirect lighting. The light intensity is controlled by the lighting switch in the same manner as all instrument panel lights.

To replace the lamp bulb, remove the socket and bulb assembly, replace the bulb and reinstall the assembly.

e. Cigar Lighter

The cigar lighter is heated by pressing the knob in until it latches; the knob will automatically unlatch and pop out when heated to proper temperature.

The lighter is equipped with an ash guard, to prevent ashes and loose tobacco from falling on the user's clothing and to permit the lighter to be passed around without danger of burning the fingers.

f. Courtesy Lights

The two 6 CP courtesy lights are mounted, one on each side, under the instrument panel so that they illuminate the front floor area. They operate, along with the dome light, from a special courtesy light switch, from the headlight switch, and/or from a door jamb switch.

DIVISION III

SERVICE PROCEDURES

120-13 EXTERIOR LIGHTS AND NEUTRAL START SWITCH REPLACEMENT AND ADJUSTMENT

a. Replacement of Sealed Beam Unit

1. Remove headlamp door by removing four retaining screws.

2. Unhook the spring from retaining ring, then remove sealed beam unit and retaining ring, being careful not to disturb the two beam adjusting screws.

3. Install new sealed beam unit by reversing removal procedure. Position lens with the "1" or "2" up. The unit has three lugs which fit into notches in the headlamp mounting ring.

CAUTION: *Make sure that sealed beam unit is marked '1' for an inboard unit or '2' for an outboard unit.*

b. Headlamp Aiming

The headlamps must be properly aimed in order to obtain maximum road illumination and safety that has been built into the headlighting equipment. With the Guide T-3 type sealed beam units, proper aiming is even more important because the increased range and power of this lamp make even slight variations from recommended aiming hazardous to approaching motorists. The headlamps must be checked for proper aim whenever a sealed beam unit is replaced and after any adjustment or repair of the front end sheet metal assembly.

Regardless of method used for checking headlamp aim, car must be at normal weight, that is, with gas, oil, water, and spare tire. Tires must be uniformly inflated to specified pressure. If car will regularly carry an unusual load in rear compartment, or a trailer, these loads should be on car when headlamps are checked. Some states have special requirements for headlamp aiming adjustment and these requirements should be known and observed.

Horizontal and vertical aiming of each seal beam unit is provided by two adjusting screws which move the mounting ring in the body against the tension of the coil spring. There is no adjustment for focus since the sealed beam unit is set for proper focus during manufacturing assembly.

c. R and I Front Parking and Signal Lights All - All Series

1. Disconnect electrical connections.

2. Remove two screws that hold lamp assembly to bumper. Remove lamp assembly.

3. Install in reverse Sequence. **d. R and I of Tail Lamp Assembly and Lense**

43-44-45-46000 Series (Less Wagons)

1. Disconnect twist-lock connectors from tail lamp assembly from beneath vehicle.

2. Remove the two rearmost bumper bracket to frame bolts.

3. Loosen, but do not remove the two forward bumper bracket to frame bolts.

4. Rotate bumper downward, exposing tail lamp assembly.

5. Disconnect electrical body connector.

6. Remove bolts holding tail lamp assembly to bumper, and remove tail lamp assembly.

7. Remove lense by removing screws holding lense to tail lamp assembly.

8. Install in reverse sequence.

48000 Series

1. Disconnect twist lock connectors from tail lamp assembly from inside rear compartment of vehicle.

2. Remove the two rearmost bumper bracket to frame bolts.

3. Loosen, but do not remove the two forward bumper bracket to frame bolts.

4. Rotate bumper downward, exposing tail lamp assembly.

5. Disconnect electrical body connector.

6. Remove bolts holding tail lamp assembly to bumper and remove tail lamp assembly.

7. Remove lenses by removing screws holding lense to tail lamp assembly.

8. Install in reverse sequence.

49000 Series

1. Remove rear bumper filler panel from inside rear compartment.

2. Disconnect twist-lock connectors from tail lamp assembly.

3. Remove bumper to body bracket screw located behind license plate.

4. Remove muffler bracket to frame screws.

5. Remove the two rearmost bumper bracket to frame bolts.

6. Loosen, but do not remove the two forward bumper bracket to frame bolts.

7. Disconnect body electrical connector.

8. Rotate bumper downward, exposing tail lamp assembly.

9. Remove tail lamp to bumper screws, and remove tail lamp assembly.

10. Install in reverse sequence.

e. R and I Back-up Lamp Switch

Manual Transmission

1. On manual transmission, disconnect electrical connection.

2. Remove two screws holding switch to column.

3. Remove switch.

4. To install switch, position shift lever in reverse detent.

5. Holding switch against column grommets, attach switch. Note: Switch pinned in reverse position during assembly.

6. Switch adjustment is obtained by moving the switch slightly or by bending the back drive rod.

Automatic Transmission

1. The back-up switch is contained in the neutral start switch. When the neutral start switch is correctly timed, the back-up switch is properly timed automatically. See neutral start adjustment.

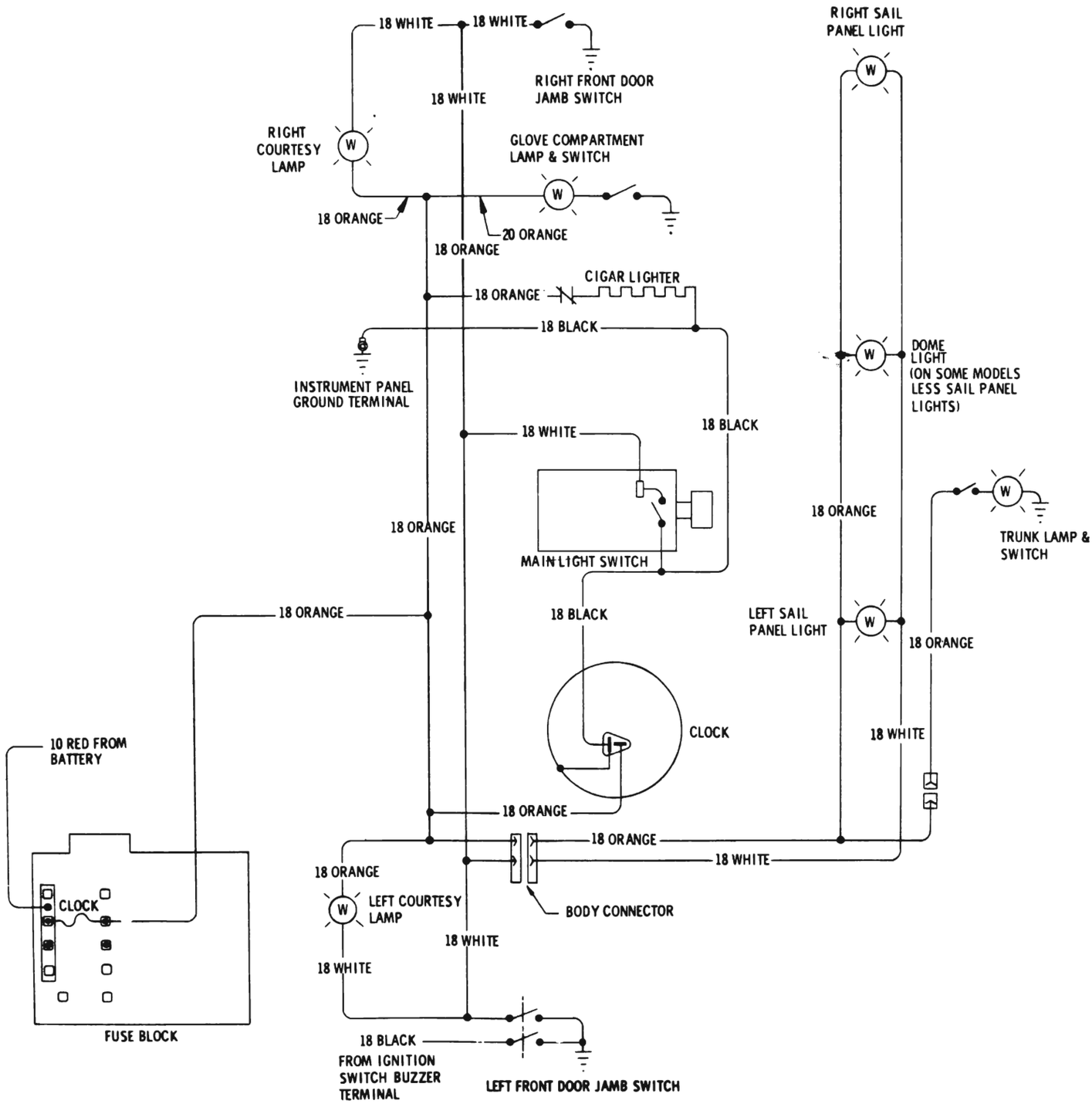

Figure 120-12 Dome, Courtesy and Clock Wiring Diagram 43-44000 Series

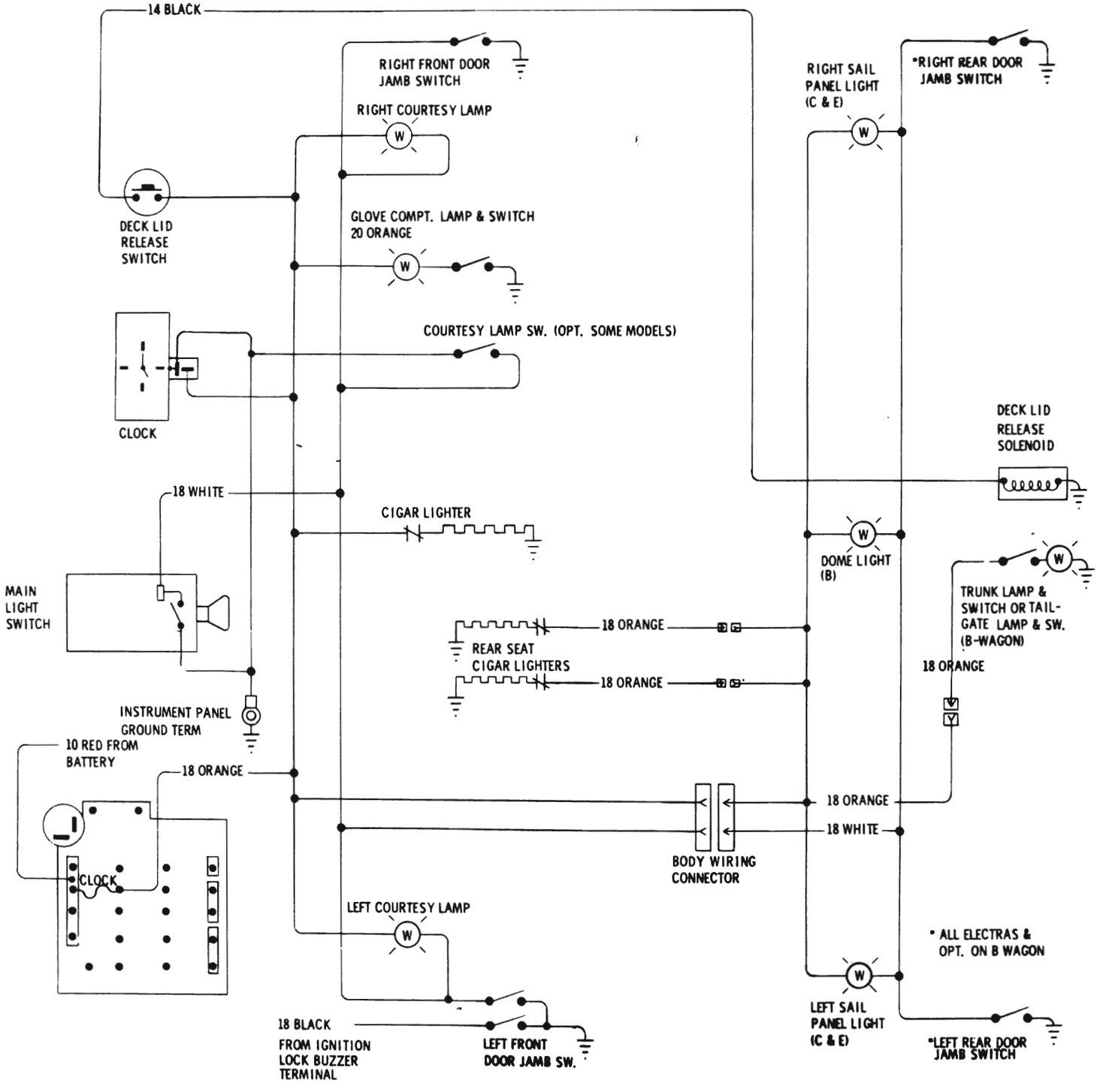

Figure 120-13 Courtesy Lamp and Deck Lid Release Wiring Diagram - 45-46-48-49000 Series

f. R and I Clutch Start Switch

1. Remove screws holding switch to clutch mounting bracket.

2. There is no adjustment for the clutch start switch. When the switch is properly installed on the clutch mounting bracket, timing is correct.

g. R and I Neutral Start Switch

1. Disconnect electrical connector.

2. Remove screws holding switch to steering column.

3. Remove switch.

4. To install switch, position gear shift in "Drive" position against drive stop on detent.

5. Position switch on column and install screws. Do not tighten.

6. Hold switch tight to column, then tighten right hand screw first.

NOTE: *Switches are assembled pinned in Drive position. Pin is designed to break away with first shift movement.*